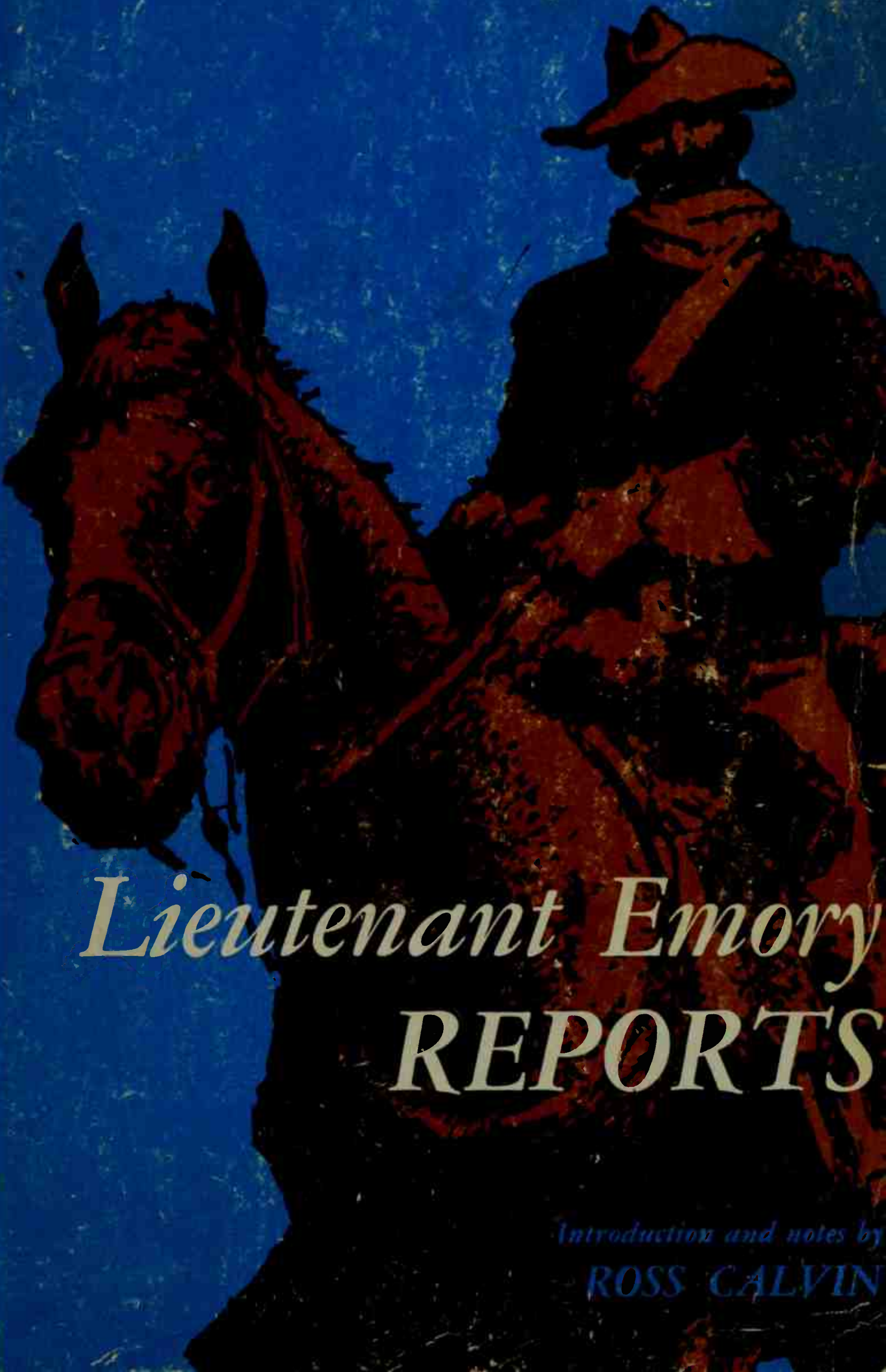

Lieutenant Emory REPORTS

Introduction and notes by

ROSS CALVIN

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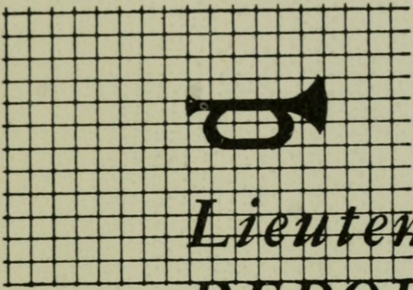

Lieutenant Emory
REPORTS

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A Reprint of
Lieutenant W. H. Emory's
NOTES OF A MILITARY RECONNOISSANCE

Introduction and notes by
ROSS CALVIN, Ph.D.

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For Rodney

STEPHEN NELSON
508 WEST OAK
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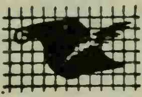

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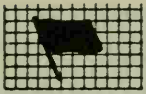

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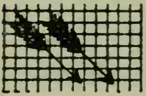

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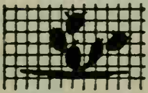

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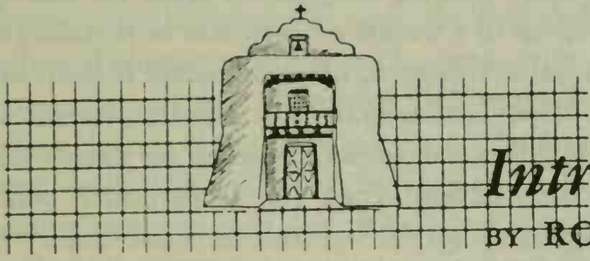

Introduction

BY ROSS CALVIN

Herewith is made an attempt to introduce or, rather, re-introduce to readers the earliest competent scientific account of the American Southwest: W. H. Emory's "Notes of a Military Reconnoissance." The young lieutenant was reporting in the year 1846 to the government at Washington, and through it to the nation at large, on the character of a vast and mainly unknown tract including New Mexico and California, which the United States was at that moment engaged in wresting away from Mexico.

Scholars in the field of Western history need no introduction to the "Military Reconnoissance." As "Executive Document No. 41," as "Senate Document No. 7, 30th Congress, First Session," and in the Long edition (H. Long and Brother, N. Y., 1848), one or all of which are available from the stacks of better research libraries, it has long been known among scholars as a gold mine of accurate, first-hand observation. But this new edition has in contemplation a considerably enlarged circle of readers, not scholarly perhaps, yet with alert, intelligent curiosity.

Emory was writing for the knowledgeable American public of a century ago, and so it seems fitting that this re-issue of his book should be addressed to the same kind of audience. Here for his fellow Americans is the rugged, salty story of his travels, minus only the great mass of now obsolescent scientific data which would distract or bore today's reader. But it still remains the same unadorned, factual picture of lands and peoples looming with three-dimensional vividness through the mistiness of legend and fiction.

How to present the "Notes" was something of a problem. At first there was only one certainty: that the story should speak for itself instead of being swallowed up in a morass of footnotes or curtained off behind a pretentious critical introduction. Emory's account is clear, well-carpentered, and about 98 per cent accurate. Yet in many places it was necessarily incomplete; in others it requires explanation for today's readers; in a few others it was mistaken. These last, in particular, require plain marking with a signboard lest the wayfarer be misinformed.

So a question arose at the very outset: for whom should the introduction and the footnotes be intended? Should Emory's bluff, outdoor manner be gentled for elderly, bespectacled men in libraries? Or should the editing be done with college history classes in mind? Or perhaps for collectors of Americana? Or possibly, after all, it should be an island of text surrounded widely by footnotes for arm-chair strategists seeking to unravel the wavering, obscure politico-military situation in New Mexico and California through that critical year 1846.

Fortunately, still another possibility remained. Since Emory originally wrote for those Americans who wished to learn something of the look, the fauna and flora, and the inhabitants of the Southwest, it might be wiser again to keep *them* in the forefront. The travelers who go streaming westward by car, by train, and by plane might wish—some of them, at least—to add knowledge as well as mileage on their journey. Here was a book written for them a hundred years ago, still highly readable, more accurate than half of today's stylized westerns, and with the added interest of the mid-nineteenth century's antiquarian mosses and lichens. So the decision was made, and it will be seen that the scale dips somewhat in their favor.

For them the "Notes" should provide no end of enjoyment. Many of the greater landmarks that attracted Emory's notice a century ago can still be observed from the highway by anyone willing to stop long enough to focus his binoculars and his attention. Here pass in review for him the Spanish Peaks, Raton Pass, the Pecos Ruin, the extraordinary City of the Holy Faith, the Rio Grande trough, Steeple Rock, the Gila Canyon at San Carlos, Casa Grande, and the sahara of sand dunes west of Yuma.

For closer observers, the footnotes regarding Emory's botanical record will, I hope, be found worth while in indicating some of the conspicuous plant life along the way: the first chollas or elkhorn cacti in southern Colorado; the plains of grama grass near Las Vegas, New Mexico; the vast zone of creosote bush beginning near Socorro and extending clear to the western margin of the desert; the mesquite everywhere, easily identifiable by its thorns and long beanlike pods; the saguaros or giant cacti first noted by Emory in the vicinity of Mt. Turnbull; the increasing bareness of the desert floor west of the Colorado River.

The editor felt no uncertainty, since a very considerable part of Emory's data is now obsolete, in leaving out the formidable two-hundred-page "Table of Astronomical Observations." The determinations of time and the contentions about latitude and longitude, fought out long ago by geographers and cartographers, are no longer of general interest. And similar considerations led to the omission of the appendix containing the charts of geographical positions and meteorological data.

The correspondence with Albert Gallatin regarding ethnographic relationships among the Indian tribes, though not without interest, is likewise out of date and could be safely dropped. For the same reasons the interesting botanical supplement was excluded. Many of Torrey's* scientific names have been superseded; and in a place or two even the classification has been revised; and a student of cacti would no longer look to Engelmann* today even though he knew more about them than any American botanist of his time.

The botanical pictures, however, were not excluded without much regret. Mr. Stanly's drawings of the cacti are of great interest and remarkable fidelity. They were made on the spot, and they would have been retained, had it been at all feasible, to show how explorers managed before the days of cameras. Other plant drawings were made later on by artists of great skill, possibly from dried specimens in the Smithsonian, and printed in Emory's appendix as engravings. On the other hand, some of the illustrations included in the body of the text itself, although they might have added antiquarian charm, are so inaccurate as to make it clear that the draughtsman never beheld the scenes he was attempting to depict. But all had to be sacrificed.

---

* John Torrey: famous Princeton botanist, who, with G. Engelmann, St. Louis physician and botanist, provided botanical addenda to Emory's writings.

Emory's map simply could not be omitted. There is no substitute for a map, and this was one of Emory's major contributions. But it presented problems, since it is of a size to require a large table-top for display; too large to be folded into reasonable compass for a book pocket. Moreover, there was the problem of finding a copy sufficiently well preserved for reproduction. But one was found, finally; and the sections covered by Emory's "Notes" (the territories from Bent's Fort westward) are reproduced here in eight overlapping sections. These reproductions make available for the first time to the average reader the first accurate, professional mapping of the Southwest and the southern route to California.

Parenthetically in this connection, the editor desires to perform public penance for a mistake once committed from lack of this very map. It concerns a minute sector of Emory's course near the Santa Rita copper mine. Knowing well that an old trail once led through the high gap in the Mimbres Mountains where road No. 180 now crosses them, he believed and said in print that the barometer must have erred in the increasing altitude and that Emory must have gone through the pass now called by his name. Actually the expedition crossed the high hills several miles farther south, as his map showed when one finally became available. The highway inscription, for which the editor was responsible, should say, not "Emory passed by here," but "Emory passed *near* here."

For the benefit of those interested in textual matters it may be stated that the form of the "Notes" here followed is not the commoner one printed by order of the House as "Executive Doc. No. 41" (containing also the reports of Cooke, Abert, and Johnston) but the earlier one submitted to the Senate. The latter was printed as "Sen. Executive Doc. No. 7" of the Thirtieth Congress, first session, and then republished on some authorization not stated, by H. Long and Brother, New York, 1848. The Long edition, the one here used, is a much finer piece of work than the House document, having better paper and less crowded typography. It contains, moreover, Stanly's drawings and the engravings of some unknown illustrators, whereas the other edition is almost without illustration. The only perceptible difference in the text of the two versions occurs in catalogues of plant names. In rare places the House document, being some months later, contains a few extra names, added, apparently, as classifications were received from Professor Torrey.

Only a carefully considered minimum of editing has been done on the "Notes" themselves. I have consistently refrained from tinkering with Emory's style or even with his spelling, except in rare instances, leaving a few grammatical slips in order to retain original flavor, making no emendations, and with the exception of an unimportant chart printed in French on page 23, permitting no omissions. (Some brief references to omitted drawings, etc., have also been dropped.)

I have corrected misspelling in certain Spanish words where there seemed a possibility that the error might be confusing to the reader, and a very few other slips, such as "turkies," which seemed a bit too uncouth to leave. We are not here dealing with a lost Shakespearean play, and so are not sinning against textual purity by correcting minor slips either on the part of the writer or his printers. To do otherwise with such minutiae would be to erect a tall monument to pedantry. An example of such editing is found on page 19. There "the 9th" in paragraph 1 is printed "the 19th" in the Government document; but "the 19th" would conflict with another reference to the same event on the same page and with the date of the letter itself, which is the 15th of the month. A letter dated on the 15th obviously could not refer to an event as having already occurred on the 19th day of the same month. A very few other such corrections have been made. They belong less to scholarship than to common sense.

Footnotes have been added to clarify, to identify, to explain, and to indicate persons or places of interest. For the greater figures like Kearny, Doniphan, and Cooke, a mere footnote is presumptuous; it is expected that a serious reader will look them up in standard reference works. As to the many obscure figures occurring in the narrative, it was felt that footnotes necessary to disinter them after a century would prove distracting if not rather pointless to most readers. Here again common sense has been the accepted guide. The professional scholar may find some explanations less complete than he might wish but seldom, it is hoped, incorrect.

If there were time the editor could make here a few profitable comparisons between Emory and the men with whom he shares the pages of Executive Document No. 41: with Lieutenant J. W. Abert, his scholarly assistant, who was left behind in New Mexico to pass a convalescence in graceful literary pursuits with the aid of Horace's *Odes* and a copy of the Greek New Testament; with Colonel P. St. George Cooke, whose narrative seemed more concerned with the sore-backed, broken-down army mules than with anything he saw along his route; with the brave and unfortunate Captain A. R. Johnston, the geological observer and draftsman of the expedition, who was killed in action at San Pascual before he could take pen in hand to revise his manuscript and polish its style. But time permits it not.

It remains only to assure and reassure research students that all of Emory's history is here intact, exactly as complete as in the first printing. Only obsolete scientific data are missing, and the omission is more than compensated by the gain in general readability. The present writer's nightmare is ponderousness, and he believes along with the centennial editors of *Harper's* that, in general, "writers who know what they are talking about [can] breathe easily while they talk." So now we are ready to look directly at the journal itself. . . . Shall we mount and ride along with the dragoons?

The following sample description is taken from my book, *River of the Sun* (pages 34-35):

> On November 1, 1846, they reached the location near where the great Coolidge Dam now stands. There the canyon boxed up, making further travel along the river impossible. They had no choice but to take a trail which Carson had previously sketched over rugged mountains, and on which they would be possibly three days without water. Mules were worn out; howitzers had not yet come up. On that nipping night, ice formed half an inch thick. Next morning the bugler sounded the call while the stars were still shining. Horses were watered, and breakfast was eaten by cold moonight.

> Through the following days they labored over mountains of irregular and confused strata so closely clustered that they could not tell from what direction they had come, nor in what direction the river flowed onward toward its mouth. On one march they were compelled to reverse their course altogether and travel down a sandy wash which bore off east of south. Perpendicular walls of traprock jutted out to form barriers against them, and when they got down again to the canyon floor, they had to make twelve crossings of the stream within six miles. At the end of "nearly a week of incredible labor and great expenditure of mule power," they had advanced westward, according to the astronomical Emory, only five seconds of time. Doubtless they cursed Carson and his trail with the rich resources of profanity that only mule skinners could command. At length, leaving the Gila altogether, they crossed a mountain spur and struck the tributary San Pedro a few miles above its junction. Worn out, they settled down under the yellowing cottonwoods for a one-day rest.
>
> On the ninth of November they reached the point where the Gila debouches from its canyoned valley upon a vast desert plain.

Emory's pages are crowded with lively scientific information, bright with colorful incident, but, as the reader must be warned, they are not literary. In truth, they could not afford to be. The writer was absorbed in executing an urgent command of the army's engineering corps to furnish "some idea of the regions traversed" by Kearny and his command. So there was no time for the slow, exacting art of literary polish. Consequently, many paragraphs suggest the picture of a bluff soldier transcribing his rough-hewn notes by the failing light of a campfire after a hard day in the saddle. As the "Notes" reveal, he took readings on the stars and made his calculations for latitude and longitude, recorded a catalog of plants noted along the way, labelled his miscellany, scribbled down in his journal any dramatic incidents of the day's march, and then rolled up wearily in his blanket. Here was material for a log book of lasting fascination, a mine of interesting facts which later seekers would explore to the utmost; but since the journalist was an army officer on war duty, he often writes less as a scientist than as a military man, and through much of his account there is perceptible the brooding tension of dangerous adventure.

The writer of the "Military Reconnoissance" was a young West Point officer whose full name was William Hemsley Emory. He was born Sept. 11, 1811 (thirty-five years before this journey), in Queen Annes County, Maryland, on an estate called Poplar Grove. The estate, originally called Brampton, had been acquired by his English grandfather in pre-Revolutionary days under a patent from the Lord Proprietor of Maryland. His ancestor, having served in the American Army during the Revolution, felt that his home should have a less aristocratic, less English-sounding name, and changed it to Poplar Grove.

On it William Hemsley was born, the son of Thomas and Anna (Hemsley) Emory. Thomas, like his father, had been a soldier, and so it was not strange that his son should choose a military career. Accordingly, he was enrolled at the United States Military Academy, class of 1831. While at West Point he acquired, it is noted, the flattering nickname, "Bold Emory." On graduation he was promoted brevet second lieutenant, Fourth Artillery. After five years, in 1836, he retired from the service; but on returning to it two years later, he was commissioned first lieutenant in the Topographical Engineers. And in that same year (1838) he was married to a great granddaughter of Benjamin Franklin, named Matilda Wilkins Bache.

Having outstanding mathematical ability, Emory was soon made principal assistant on the Northeastern Boundary Survey between the United States and Canada, where his tour of duty extended until 1846. At the outbreak of the Mexican War in that year he was assigned as chief engineer officer to Kearny's Army of the West which was then embarking upon its campaign against New Mexico and California. Shortly after the force of dragoons—which, after various sub-divisions, then comprised the Army of the West—reached California, he was raised to acting assistant adjutant general. During the brief hostilities there he distinguished himself at the battle of San Pascual and in the minor skirmishes of San Gabriel and the Plains of Mesa.

As hostilities ended, his commander, General Stephen Watts Kearny, became involved in a quarrel with Frémont, who refused to acknowledge his authority. At the court-martial of Frémont on a charge of insubordination, Emory, who had by that time returned to Washington, seems to have been called as a witness. It is impossible to say just what part he took in the unfortunate affair, but Frémont's father-in-law, the influential Senator Benton, at the time made vindictive threats of a court-martial against both Emory and Colonel Cooke, who were in Kearny's command.

Nothing came of the threats however, and Emory was soon afterward assigned as chief astronomer in charge of running the boundary line between the United States and Mexico. His task stretched out from 1848 to 1853; and in the following year the President made him both commissioner and astronomer with the full powers assigned to the office under the Gadsden Treaty.

During his service in the Topographical Engineers, Emory made outstanding contributions to the knowledge of the West by his surveys and diligently applied his skill as cartographer in compiling data and revising the existing maps of the country west of the Mississippi.

His "Notes of a Military Reconnoissance" appeared as "Senate Executive Doc. No. 7, 30th Cong. First Sess.," and also as "House Executive Doc. No. 41" of the same session. Later on he compiled his other Southwestern records and researches into the voluminous "Report on the United States and Mexican Boundary Survey," which appeared as House Executive Doc. No. 135, 34th Cong., First Sess.

With Emory's distinguished service in the Union Army during the Civil War we are not here concerned. He was commissioned major general of volunteers in 1865. In 1875, after forty-five years of service, he retired from the army. His death occurred December 1, 1887.

Emory, recapitulating for his readers the orders received from Colonel J. J. Abert of the Topographical Engineers, states that since it was expected Kearny's route would lie across unexplored regions, he (Emory) and the officers assigned to duty with him would be "employed in collecting data which would give the government some idea of the regions traversed." In a nutshell, his simple assignment was to ascertain whether or not the Southwest was worth taking by force and, if so, whether or not it was worth keeping! So he was directed to gather information as full and correct as possible on everything of a military, scientific, and economic nature that lay between Bent's Fort and the Pacific Ocean. Of the three aspects, the military was at that moment the most urgent. Army intelligence had by that time doubtless accumulated a vast fund of knowledge about Mexico proper but appears to have known next to nothing about the northern frontier provinces. And the reason was simple; nobody—not even the Mexican officials themselves—had either trustworthy information or a good map.

In New Mexico, although the hinterland was almost unknown, a single strip of territory along the Rio Grande was then very well known. But west of that strip there was nothing but an immense unmapped tract, stretching clear to the California coastal plain, on which stood not one military installation, in which no armies lay in wait. Somewhere beyond the unknown mountains there extended along the coast a line of settlements protected by three or four *presidios* whose strength could only be guessed from reports of trappers and backwoodsmen. The over-all picture contained only a few known features. Emory was expected to fill in the details. General Kearny had started across the Great Plains with a force of nearly two thousand men to strike his blow against the Mexicans in the Southwest. A very few months later he was actually continuing on against the California *presidios* with a total force of 110 men. In the present writer's opinion, the two facts, placed side by side, indicate pretty well the amount of information the army had at the time.

The one devastating military discovery about New Mexico made by Emory—and it was repeated in California—was the disaffection that pervaded all classes of society. That precisely was what a government in Washington, bent on annexation, most wanted to hear. While there was no fifth column boring from within, and while the Americans already in the department were certainly neither spies nor government agents, the New Mexicans had already discovered which side of their bread was buttered. The convincing arguments were the Navahos and the Apaches.

The scourge of Indian depredations had grown not lighter but heavier with the passing generations, and conditions had now reached the intolerable state when the savages could, in broad daylight make raids on civilized villages, drive away flocks and herds, abduct the women. The far-off government in Mexico City, while able to levy taxes, both civil and religious, upon them and compel them to serve in the militia at their own expense thirty days out of the year, was not able to protect them. And they knew it. So it is probable that in a very real sense the American advance appeared to most of them like the approach of a protecting umbrella. And their enlightened self-interest must have seemed well justified by Doniphan's prompt campaign against the Navahos.

In the New Mexican army and officialdom there was general disaffection, if not outright happiness at seeing the American Army. Near Las Vegas the lieutenant who bore a message from Armijo, the Mexican commander, embraced both General Kearny and Emory at the leave-taking. The next day as they entered the town Kearny addressed the citizens, saying to them, "We come amongst you as friends . . . My government will keep off the Indians, and protect you in your persons and property." Without coercion the town officials then took the oath of allegiance to the United States and were continued in office. They had exchanged their citizenship in a republic which cared next to nothing about them for the immediate and valid protection they craved.

A day or two later the alcalde of Pecos shook hands with Kearny and congratulated him on the arrival of his army. And at Santa Fe the lieutenant governor, dressed in the American fashion, wrote a letter to Kearny assuring him of the hospitalities of the city. Furthermore, if a conclusion may be drawn from two instances, the Roman Catholic clergy had come strongly under the American influence and were friendly. At Santo Domingo the priest's parlor was curtained with a tapestry stamped with portraits of the American presidents—a touch which shows that some Missourian understood the art of propaganda—and at Padilla the priest delivered a sermon "eulogizing the grandeur, magnanimity, power and justice of the United States." It can scarcely be considered strange that the uneducated common people of New Mexico, having such leading, followed as they were led. And here, in truth, was military information of greatest import to Washington.

In California there was equal disaffection toward Mexico; but there the dread of Indian raids was replaced by the dread of annexation by

England or some other foreign power. Both provinces knew better than to expect any help from the central government; and both may have had secretly, as Texas had, a certain willingness to accept the protection of the United States.

In Emory's own time the weightiest scientific contribution of his "Notes" was in the domain of mathematical geography. Before his data were published there was not one point between the Rio Grande and the Pacific Ocean whose exact location on the earth's surface was known. He made a large-scale map of the entire distance, the first one ever made. From observations made at the end of many a wearisome day's march he computed latitude and longitude for each camp. And in spite of the mistreatment which his instruments—especially his chronometers—received along the way, he published results that differ from today's best maps only by inconsequential decimals. His determinations of altitude show departures from today's figures amounting in most cases to no more than a few feet. Although Kearny's expedition, unlike Cooke's, which was blazing the trail for a later highway, had as its immediate aim only the overcoming of distance, Emory's figures furnished to engineers after him the profile of hills and grades, a needful basis of facts in projecting a route to the Pacific. Although his detailed tabulations were relegated to an appendix, he constantly interrupts his main narrative with brief notes of his readings on Arcturus, Alpha Aquilæ, Alpha Lyræ, Procyon, and others of the greater stars, as if to remind all readers of the trustworthy mathematical basis of his record.

Furthermore he measured streams, calculated gradients, noted the volume of water, gathered testimony—often as unscientific as the mountain men who gave it—on the tributary branches, studied contours, estimated drainage areas. He noted wind velocity, the humidity of the air, the character of the clouds, and recorded temperature on thermometers of three types; gathered climatic data on the desert, a type of country then unknown to Americans.

Emory's contributions to the scientific knowledge of the Southwest are valued highly also among botanists. While some of his finds are indicated *seriatim* in the footnotes, it seems well to point out here that very soon after his expedition left the well-beaten Rio Grande trail, he discovered a new species of evergreen oak (which Torrey, the famous Princeton botanist, named *Quercus emoryi*) and a new species of ash tree now bearing the Latin cognomen *Fraxinus velutina*. Later on, traveling westward, he found a new species of jointed cactus (*Opuntia stanlyi*, as Engelmann, the St. Louis physician and botanist, called it in honor of the expedition's artist), two new species of the highly important forage grass of the genus now called *Bouteloua* (*Chondrosium*), and various other plants which have been listed in Standley's "Plants First Described from New Mexico." (Smithsonian Inst., 1910.)

Shortly after entering what is now Arizona, Emory had the fortune to discover an undescribed barrel cactus, which the botanist Engelmann named in his honor. All in all, with his botanical discoveries, his ethnographic notes on the Apaches, Pimas, and Maricopas, his mineral and chemical specimens, his archaeological data on sherds and ruins, he gave the savants of his day something to talk about.

But what must have seemed most practical of all to the leg-weary, saddle-weary dragoons, he even gave them, by means of a viameter ? attached to the howitzer's wheel, a close approximation of the length of each day's march. By air line the wheel would have been extremely inaccurate, but since a soldier with a pack on his back does not travel in an air line, it recorded with dull fidelity all the heavy step-by-step ascents, the downhill slides, the hairpin turns by which in mountainous country altitude is gained or lost, the free, lengthened pace on level ground where straightaway going was possible. While he did not measure the geometrical distance to California, he was able to tell future commanders how many steps a footsore mule would have to take to get there.

But to modern readers the most interesting thing is Emory's picture of the general economy of the Southwest as it looked one hundred years ago. There was at that time, it must be said, no trace of the hushed admiration for all things Spanish that one finds today among many Americans at Santa Fe, Taos, and other places where artists and sophisticates congregate. Within the last few decades the aesthetic vogue for Spanish-American architecture, pageants, dances, cookery, arts, and crafts, has entirely reversed the condescending, half-contemptuous attitude expressed by the American officers in 1846. In fact, the Spanish graces and amenities have gradually captivated the "Anglos" in much the same way as the classical Greek culture enthralled the Roman conquerors in the Augustan age.

In the New Mexicans, brash, vigorous Americans of 1846 saw mainly a miserably poor agrarian people who matched their conception of the down-trodden peasants of the middle ages. Among them they noted a picturesque but decadent aristocracy wasting its days, apparently, in gambling, fandangos, and political machinations. What they believed was half truth, half untruth. Yet there was no doubt that the Mexicans —and the name was at that time perfectly proper—were using some agricultural practices that belonged in the Old Testament era. A plow was still to them a sharpened tree-fork perhaps strengthened with an iron point; and their wheat crops were still winnowed by means of bull-hide sieves.

For the transportation of burdens they had nothing more advanced than a pack horse or the enormously cumbersome carreta, a cart whose wheels were sawed from the trunk of a cottonwood tree. Their placer mining, the only kind of economic importance, was equally primitive. Lieutenant Abert, one of Emory's assistants, who visited the workings near Tuerto, describes it thus: "We saw many miserable-looking wretches, clothed in rags, with an old piece of iron to dig the earth, and some gourds or horns of the mountain goat (*sic*) to wash the sand."

Only in the livestock industry, and more especially in sheep-raising, were the natives engaged in an enterprise of any magnitude. New Mexico was then the most favored province in the republic for sheep, but since they sold for only a dollar a head, the profits were small, and there was always the danger that Indians would drive off the flock and kill the herder.

In short, agriculture was only subsistence farming. There was no industry; and except for that which came across the plains, plus the trickle that came up along the Rio Grande trail, there was no commerce. The only income that kept money in circulation, as we learn from Don Pedro Bautista Pino, was the federal salary paid to the governor and his assistants, and to the 121 soldiers in the garrison at Santa Fe. The same authority goes on to say that in New Mexico "until recently the majority of its inhabitants have never seen money." (*Three New Mexico Chronicles,* the Quivira Society, Albuquerque, 1942.) And there existed in the province, as Emory pointed out, a system of peonage which had many of the evils of slavery without its advantages. By it a man could be held in lifelong bondage for a debt of less than a hundred dollars, and when he became too old or infirm to work, no master was responsible for his keep.

But a change was at hand. Harbingers of the change had arrived long before the American Army. The prairie schooners of the Santa Fe Trail had already begun to revolutionize old ways of life; and with them came Yankee workmen who made their contribution of technical skill to the backward commonwealth. Lawyer Barreiro (*Three Chronicles*), in 1832, had already begun to take notice of them. He say: "A few Anglo-American craftsmen are established in New Mexico . . . It is to be expected that the natives of the country will learn something in the foreign shops, or at least that they may be stimulated by observing the excellent work of these foreigners. Among the foreign craftsmen there are tailors, carpenters, blacksmiths, hatters, tinsmiths, shoemakers, excellent gunsmiths, etc., etc."

Thus it is clear that at the back door of the United States there was then a country with many American ties, which, at the middle of the progressive nineteenth century, was still living, as it were, in the dark ages. All this Emory saw, and a thousand similar things. By them he was readily persuaded that the unspoken though already half-formulated policy of his government was wise, enlightened, necessary and, in the larger sense, not inhumane. Emory felt in 1846, as probably a majority of his countrymen feel today about the so-called backward nations of the world, that they would be benefited by railroads, good highways, commercial development, technical education, and the other ordinary services and conveniences of civilized life—and all this, not unnaturally, under American tutelage and protection.

He did not consciously or openly slant his findings toward annexation. Yet evidences are numerous that he was aware of his government's aim and that he supported it by discovering a multitude of facts that would argue for it. And in that direction the "Notes" exerted an immense persuasiveness. Here as a conclusion the writer may be permitted to quote the summary taken from his book, *River of the Sun* (page 60):

> At Washington, the War Department thought so highly of Emory's investigations that they had printed as soon as possible a huge 10,000-copy edition of the "Military Reconnoissance," as it was entitled, and bound up with it the journal of Captain Johnston, the report of Colonel Cooke on his wagon journey, and the Southwestern travelogue of Lieutenant Abert. Secretary of War Marcy evidently had the canny sense to see from the documents that the country was worth keeping, and was eagerly using these materials to persuade his countrymen to the same opinion. Accordingly, at the close of the Mexican War, a Boundary Commissioner, John R. Bartlett, was sent to run a line round the prize.
>
> But Bartlett's survey proved unsatisfactory; and after the Gadsden Tract was purchased, Emory, who had helped to win the new empire for the United States, was sent as Boundary Commissioner to re-draw the line.
>
> Safely inside when the last degree of latitude and longitude was reckoned, lay the gold fields of California, the undeveloped silver deposits of New Mexico, the copper of Arizona, unguessed riches in petroleum, gas, and coal, the great pine forests and wide-flung grazing ranges that stretched between Texas and the West Coast, the surpassingly rich valleys in which agriculture was to reach its final climax—there on the Great American Desert.

St. James' Rectory,
Clovis, N. M.
August, 1950

NOTES

OF A

MILITARY RECONNOISSANCE,

FROM

FORT LEAVENWORTH, IN MISSOURI,

TO

SAN DIEGO, IN CALIFORNIA,

INCLUDING PARTS OF THE

ARKANSAS, DEL NORTE, AND GILA RIVERS.

BY W. H. EMORY,

BREVET MAJOR, CORPS TOPOGRAPHICAL ENGINEERS.

MADE IN 1846-7, WITH THE ADVANCED GUARD OF THE "ARMY OF THE WEST."

NEW-YORK:
PUBLISHED BY H. LONG & BROTHER.
1848.

Orders, Instructions, Explanatory Remarks.

War Department,
Washington, December 15, 1847.

Sir: In compliance with a resolution of the Senate of the 9th instant, requiring the Secretary of War to communicate to the Senate "a copy of notes of a military reconnoissance of the route from Fort Leavenworth, in Missouri, to San Diego, in California, by Lieutenant William H. Emory, of the topographical engineers, with a map of the said route and of the Arkansas, Del Norte, and Gila rivers; as also the report of Colonel P. St. George Cook's route to California, after diverging from the track of General Kearny," I have the honor to submit herewith a report from the colonel of the corps of topographical engineers, with the copies required by the resolution.

Very respectfully, your obedient servant,

W. L. Marcy,
Secretary of War.

Hon. Geo M. Dallas,
President of the Senate.

Bureau of Topographical Engineers,
Washington, December 15, 1847.

Sir: In obedience to your orders, I have the honor to submit the report of First Lieutenant Emory, corps topographical engineers, of his reconnoissance of the route from Fort Leavenworth, in Missouri, to San Diego, in California, being a reply to a resolution of the Senate of the 9th instant; also the report and map of the route of Lieutenant Colonel Cook, being a deviation from the route followed by General Kearny, from the valley of the "Del Norte" to a point on the "Gila," called for by the same resolution.

I beg leave to remark that Lieutenant Emory's map, sent with his report, and founded, as the report will show, upon numerous, careful, and well digested astronomical observations, is the original. We have not had time to make a copy. I hope, therefore, that the original will be returned to the archives of this office, to which it belongs. A copy will be made in time for the engraver. This course will also afford opportunity to revise the map. There is one leading position, in reference to which the computers of observations disagree more than a minute in longitude. There is also danger, if the original goes into the hands of the artist, that it will be defaced and seriously injured.

The numerous sketches and drawings referred to in Emory's report are retained in the office, subject to the directions of the Senate. These are also originals, copies of which have not yet been made.

If the work should be printed, it may probably be advisable to have the map and sketches executed under the direction of this bureau, as in former instances.

Respectfully sir, your obedient servant,

J. J. Abert,
Colonel Corps Topographical Engineers.

Hon. W. L. Marcy,
Secretary of War.

INSTRUCTIONS, AND EXPLANATORY REMARKS

Washington, September 1, 1847.

To Col. J. J. Abert,
Chief of the Corps of Topographical Engineers:

Sir: The following order was received by me June 5, 1846:

Bureau of Topographical Engineers,
Washington, June 5, 1846.

Sir: You will repair, without delay, to Fort Leavenworth, and report yourself and party to Colonel Kearny, 1st dragoons, as field and topographical engineers of his command. In addition to yourself, the party will consist of—

First Lieutenant Warner, now at Washington.
Second Lieutenant Abert, do.
Second Lieutenant Peck.

Lieutenant Peck is at West Point, but he has been ordered to repair to St. Louis, and report to you at that place. Should Colonel Kearny be at St. Louis, which you will ascertain on passing through that place, you will report to him at St. Louis.

Although ordered to report as field and topographical engineers, under the regulations, you will not consider these in the light of exclusive duties, but will perform any military duty which shall be assigned to you by Colonel Kearny in accordance with your rank.

Should Colonel Kearny have moved on the prairies with his command, you will make every effort to overtake him.

Respectfully, sir, your obedient servant,

J. J. Abert,
Colonel Topographical Engineers.

To Lieutenant W. H. Emory, *Top. Eng.*

Anticipating that the route of Colonel Kearny's command would be through unexplored regions, your suggestions required, that in all cases where it did not interfere with other and more immediate military demands of the service, the attention of myself, and the officers assigned to duty with me, should be employed in collecting data which would give the government some idea of the regions traversed.

The column commanded by Colonel Kearny, to which we were attached, styled "The Army of the West," to march from Fort Leavenworth, was destined to strike a blow at the northern provinces of Mexico, more especially New Mexico and California.

It was supposed we would barely reach Fort Leavenworth in time to join the army, and but twenty-four hours were allowed us in Washington to collect the instruments and other conveniences for such an expedition. This was quite sufficient for all the objects appertaining directly to our military wants, but insufficient for the organization and outfit of a party intended for exploration. In submitting the following notes, they should be received as observations made at intervals snatched from other duties, and with an expedition whose movements were directed by other considerations than those which would influence the views and conveniences of an explorer.

We left Washington on the 6th of June, unable to procure a pocket chronometer, or telescope of power sufficient to observe eclipses; but through your intercession, and by the kindness of the Chief of Hydrography, U. S. N., we were provided with two excellent box chronometers, No. 783 and No. 2075, by Parkinson and Frodsham, and we received from the bureau two of Gambey's 8½ inch sextants.

Crossing the Alleghanies the stage capsized with us, and placed the chronometers in great danger, but the prudence of Mr. Bestor, who carried them in a basket on his arm, saved them from destruction. Their rates were changed very materially by the accident, but subsequent observations show no other injury had been incurred.

Elaborate observations for time and rate were made at St. Louis; from which place, being tolerably well established in geographical position, it was intended to carry the longitude by chronometer, but, on reaching Fort Leavenworth, the chronometers were again found to have changed their rates materially, owing to the peculiarly unsteady and jarring motion of the steamer upon which we ascended.

The meridian of Fort Leavenworth, as determined by Mr. Nicollet, is therefore taken as that to which all the determinations of longitude as far as Bent's fort, by the chronometer, are referred, and any change which subsequent observations may make in the longitude of Fort Leavenworth, will be common to them. The travelling rates of chronometer 783 were, as the observations will show, very uniform, and longitudes deduced from it, compared with direct measurements of lunar distances made at various points, give satisfactory comparisons as far as camp 70, October 9th, on the Rio del Norte. At this point we left the wagons, thence crossing the mountains to the Gila river, some irregularity in the rates is discoverable, until we reach camp 83, October 26th, on the Gila river.

From that point (camp 83) to San Diego, on the Pacific, the rates were very uniform. Assuming Captain Belcher's determination of San Diego, 7*h*. 48*m*. 44*s*., west from Greenwich, and carrying my longitudes back, they compare well with the longitudes derived from the direct measurements of lunar distances made at different points on the route.

The longitude between the camps of October 9th and October 26th is derived from direct measurements, and from lunar distances.

Of the latitudes.

The latitudes were determined by measuring with one of the Gambey sextants the double altitudes of stars near the meridian, and at all important points by observations on north and south stars as nearly as they could be obtained of equal altitudes. At these last points, where the observations are multiplied, their places may be depended upon to the nearest five seconds.

Of local time.

The local time was, in all cases, determined by altitudes of the heavenly bodies on different sides of the meridian.

The astronomical observations,   in number, were computed, in the first place, by myself and Mr. Bestor, and subsequently by Professor J. C. Hubbard. The results, as given in the appendix,* are the final computations of Professor Hubbard, whose well-earned reputation as a computer entitles his work to entire confidence. These observations establish the geographical position of 52 points, extending from Fort Leavenworth to the Pacific, most of which lie in regions before undetermined.

Heights above the sea.

At Fort Leavenworth, through the liberality of the medical department, I was furnished with a syphon barometer, by Bunten, No. 515, the comparison of which, with the standard at Paris, is given in the subjoined note.

Observatoire.—Comparison du baromètre à syphon, No. 515 de Bunten, *avec le baromètre* de l'observatoire.

Le baromètre No. 515, donne des hauteurs plus grandes que celles qui sont indiquées par le baromètre de l'observatoire, la différence est de 0.45 centièmes de millimètre.

Baromètre	No. 515	759.19
	Observatoire	758.74
	Différence	+0.45

* * * * *

Paris *le* 5 *Fevrier,* 1843.

GORYOZ.

The discussion of the data upon which the heights indicated by the barometer have been founded, would, if pursued, occupy some space; for the present, it will be sufficient to say that the basis of comparison, as far as Santa Fé, is a series of observations made at Fort Leavenworth, with the same instrument, running through two years; and the height of the hospital at Fort Leavenworth above the sea assumed at 912 feet.

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* Appendices, referred to here and later, are not included in this edition.

From Santa Fé, down the Del Norte, and thence west as far as camp 83, of October 26th, the basis of comparison is the series of observations, running through two months, at Santa Fé.

From the camp of October 26th, on the Gila, the basis of comparison is the mean of the observations made at San Diego, on the Pacific, near the level of the sea. The barometer was left on the Pacific, under the charge of Lieutenant Warner, topographical engineers; and the further observations made with it on that coast will afford, at some future time, data upon which to reconsider the results now given, particularly those in the last section. In the absence of corresponding observations, the object has been to get a column of reference, progressing west, with the places observed at.

The formula used is that of Altman's. The heights deduced are marked on the map; but they should be considered, at best, but as near approximations to the truth.

The time of day at which the observations were made is not that which experience has shown to be best; but, the halts being beyond my control, I was compelled to yield to circumstances.

As far as Santa Fé, I received the assistance of Lieutenants J. W. Abert and G. W. Peck, of the corps of topographical engineers; both of whom had but too recently returned from an exploring expedition in less favored climates, and fell ill—the first at Bent's fort, and the last at Santa Fé.

From Santa Fé to the Pacific, I was aided by First Lieutenant W. H. Warner, of the topographical engineers, and Mr. Norman Bestor; all of whom deserve notice for the zeal and industry with which they performed their duty. Whilst with me, Lieutenant Peck made the topographical sketches; after he left, they were made by Lieutenant Warner.

I would here gladly avail myself of the opportunity of thanking Colonel Robert Campbell and Dr. Engelmann, of St. Louis, for the disinterested and efficient aid they rendered us in St. Louis in our hurried preparations for a long and tedious journey. The advice given us by Colonel Campbell, a gentleman of great experience in prairie life, was felt beneficially to the last of the journey.

The country between Fort Leavenworth and Santa Fé, traversed by the army of the west, may be divided into three great divisions, distinct in character, climate, and products, viz: from Fort Leavenworth to Pawnee fork, from Pawnee fork to Bent's Fort, and from Bent's Fort to Santa Fé.

The two first divisions have been so often traversed, that I have omitted my diary embracing them, contenting myself with a few general remarks; but the scientific, and especially astronomical observations referring to them, are as full as in regard to the other regions.

For the information of detachments moving on that route, a table of distances has been prepared; which, with the map (though on rather too small a scale for military purposes,) may enable movements to be made without other guides.

Between Fort Leavenworth and Pawnee fork, the country is a high, rolling prairie, traversed by many streams, the largest of which is the Kansas, or "Kaw;" and all but this river may be forded, except during freshets.

The beds of the streams are generally deeply indented in the soil, and their banks almost vertical, developing, where the streams make their incisions in the earth, strata of fossiliferous limestone, of various shades of brown, filled with the remains of crinoidea.

On the branch of the Wah-Karrussi, where the Oregon trail strikes it, a seam of bituminous coal crops out. This is worked by the Indians, one of whom we met driving an ox-cart loaded with coal, to Westport. For the most part, the soil is a sandy loam, covered with rich vegetable deposits; the whole based upon a stratum of clay and limestone.

Trees are to be seen only along the margins of the streams, and the general appearance of the country is that of vast, rolling fields, enclosed with colossal hedges. The growth along these streams, as they approach the eastern part of the section under consideration, consists of ash, burr oak, black walnut, chestnut oak, black oak, long-leaved willow, sycamore, buckeye, American elm, pig-nut hickory, hack-berry, and sumach; towards the west, as you approach the 99th meridian of longitude, the growth along the streams becomes almost exclusively cotton-wood. Council Grove creek forms an exception to this, as most of the trees enumerated above flourish in its vicinity, and render it, for that reason, a well known halting-place for caravans, for the repairs of wagons, and the acquisition of spare axles.

On the uplands the grass is luxuriant, and occasionally is found the wild tea and pilot weed.

As you draw near the meridian of Pawnee Fork, 99° west of Greenwich, the country changes, almost imperceptibly, until it merges into the arid, barren wastes described under that section. The transition is marked by the occurrence of cacti and other spinose plants, the first of which we saw in longitude 98°.

Near the same meridian the buffalo grass was seen in small quantities, and, about noon, our party was cheered for the first time by the sight of a small "band" of buffalo, two of which we killed, at the expense of a couple of fine horses, which never recovered from the chase. Horses occasionally fed on grain become very weak feeding on grass alone, and should never in that condition be subjected to quick work. A violation of this precept has cost many volunteers their horses, and entailed trouble without end on many inexperienced travellers "westward bound." The next day immense herds of the buffalo were seen.

We were now on ground (see map of July 10th) which is traversed by the nomadic tribes of Pawnees, Sioux, Osages, and occasionally the Comanches. Their range is seldom farther east than Council Grove. The country thence, to the western borders of Missouri, is in the hands of Indians owing allegiance to, and receiving stipends from, the United States; they live in log-houses, cultivate the soil, rear cattle, and pursue some of the arts of peace. They form the connecting link between the savage of the plains and the white man of the States.

The latitude of our camp, a few thousand feet southeast of where the road crosses the Pawnee Fork, is 38° 10′ 10″; and the longitude, by chronometer, is 98° 55′ 22″. The height above the sea, indicated approximately by the barometer, is 1,932 feet; the point, as will be seen on the map, it but a short distance from the junction of the Pawnee Fork and the Arkansas river.

The section of country embraced between this point and Bent's Fort is totally different in character from that just described, but the change is gradual, and may be anticipated from what has been said in reference to the appearance of the country so far east as the 98th degree, or even the 97th meridian.

The position of our camp near Bent's Fort, determined by 29 altitudes of Polaris and 35 circum-meridian altitudes of alpha aquilæ, is 38° 02′ 53″, and the longitude, by the measurement of distances between the moon and alpha aquilæ and alpha virginis, is 103° 01′ agreeing within 34*s*. with the chronometric determination of the same point.—(See Appendix.)

Our route from Pawnee Fork to this point was along the Arkansas river. The approximate height of Bent's Fort above the sea is 3,958 feet, and the height where we first struck the river, at the bend, is 1,658 feet, the distance between these two points being 311 miles, the fall of the river is about seven feet and four-tenths per mile. Its bed is of sand, sometimes of rounded pebbles of the primitive rock. It is seldom more than 150 yards wide, and, but for the quicksands, is everywhere fordable. The bottom land, a few feet above the level of the water, varies in width from half a mile to two miles, and is generally covered with good nutritious grass. Beyond this the ground rises by gentle slopes into a wilderness of sand hills on the south and into prairie on the north. There are one or two exceptions; for instance, at the great bend, the sand hills from the south impinge abruptly on the course of the river; at Pawnee rock, a long swell in the ground terminates in an abrupt hill of highly ferruginous sandstone; and ten miles above Chouteau's island, the hills along the river are vertical, as if the river had cut a passage through them; and, as you approach Bent's Fort, the hills generally roll in more boldly on the river, and the bottoms become narrower, and the grass more precious.

At these places the geological formation can be seen distinctly. On the lower part of the river it is a conglomerate of pebbles, sometimes shells cemented by lime and clay overlaying a stratum of soft sandstone, which in turn, overlays a blue shale, and sometimes the richest description of marl.

Higher up the river, we find the same formation, but in addition argillaceous limestone, containing ammonites and other impressions of shells in great variety, and in more than one instance distinct impressions of oyster shells. The dip in both cases about 6°, and a little north of east.

The soil of the plains is a granitic sand, intermixed with the exuviæ of animals and vegetable matter, supporting a scanty vegetation. The eye wanders in vain over these immense wastes in search of trees. Not one is to be seen. The principal growth is the buffalo grass, cacti in endless variety, and very rarely that wonderful plant, the Ipomea leptophylla, called by the hunter, man root, from the similarity of its root in size and shape to the body of a man. It is esculent, and serves to sustain human life in some of the many vicissitudes of hunger and privation to which men who roam the prairies, as an occupation, are subjected.

July 24. Near the dry mouth of the Big Sandy creek, the Yucca Angustifolia, palmillo of the Spaniards, or soap plant, first made its appearance, and marked a new change in the soil and vegetation of the prairies.

The narrow strip which I have described as the bottom land of the Arkansas, varying from half a mile to two or three miles wide, contains a luxuriant growth of grasses, which, by the judicious selection and distribution of the camps, sustained all the animals of the army of the west whilst on the river. The only tree of any magnitude found on its course is the cotton-wood, (Populus Canadensis,) and it frequently happens that not one of these is seen in a whole day's journey, and the buffalo dung and wild sage constitute the only fuel to be procured. About 35 miles before reaching Bent's Fort is found what is called the "big timber." Here the valley of the river widens, and the banks on either side fall towards it in gentle slopes. The "big timber" is a thinly scattered growth of large cotton-woods not more than three-quarters of a mile wide, and three or four miles long. It is here the Chyennes, Arapahoes, and the Kioways sometimes winter, to avail themselves of the scanty supply of wood for fuel, and to let their animals browse on the twigs and bark of the cotton-wood. The buffaloes are sometimes driven by the severity of the winter, which is here intense for the latitude, to the same place to feed upon the cotton-wood. To this point, which has been indicated to the government as a suitable one for a military post, Mr. Bent thinks of moving his establishment.

In addition to the grasses and cotton-wood mentioned, we find in the bottoms wild plum, wild cherry, willow, summer grape, cat-tail, scouring rush, a powerful diuretic upon horses, Mexican poppy, and other plants, which will be found noted in appendix No. 2.

The animals of this section of the country are the buffalo, deer, antelope, elk, marmot, wolf, agama cornuta, &c.; but, for a more specific knowledge of the natural history of the region from Fort Leavenworth to Bent's Fort, reference is made to the interesting notes of one of my assistants, Lieutenant Abert, in appendix No. 6.

Except the buffalo, game is very scarce, and cannot be depended upon to support a party of men, however small their number. The buffalo, where they range, may be relied upon to support a column of many thousand men; but their range is very uncertain. This year it was westward, between the 98th degree and the 101st meridian of longitude.

For an account of the country from Bent's Fort to the Pacific, I submit my notes, in which I have set down what passed under my own observation.

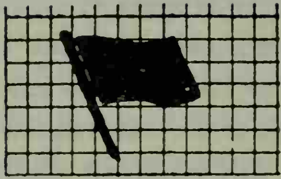
The accompanying map is also limited chiefly to the route followed, based upon the data exhibited in the appendices, and numbered from 3 to 5.

For a more specific knowledge of the plants peculiar to the country traversed than will be found in the journal, I refer to the catalogue prepared by that eminent botanist, Dr. John Torrey, to whom all the plants and drawings were submitted—forming appendix No. 2. The specimens brought home to aid me in elucidating the geology of the route, were submitted to Professor John Frazer, of the Pennsylvania University, to whose learning and knowledge I am under great obligation.

The military force under Colonel Kearny, destined for the conquest of New Mexico and the countries beyond, consisted of two batteries of artillery, (6-pounders,) under the command of Major Clark, three squadrons of the first dragoons, under Major Sumner, the first regiment of Missouri cavalry, under Colonel Doniphan, and two companies of infantry, under Captain Agney. This force was detached in different columns from Fort Leavenworth, and were concentrated with admirable order and precision on the 1st of August, at a camp nine miles below Bent's Fort.

And here I would take occasion to speak of the excellent understanding which prevailed throughout between regulars and volunteers, and the cheerfulness with which they came to each others assistance whenever the privations and hardships of the march called for the interchange of kindly offices among them. The volunteers, though but recently accustomed to the ease and comforts of smiling homes, bore up against fatigue, hunger, and the vicissitudes of a long and tedious march, through unexplored regions, with a zeal, courage, and devotion that would have graced time-worn veterans, and reflect the highest credit on their conduct as soldiers. There was a noble emulation in the conduct of regulars and volunteers, which, in no small degree benefitted the service; while, at the same time, it promoted that cordiality in their intercourse, which will make their future meetings, in the more peaceful walks of life, a gladsome event to both.

Notes



Bent's Fort to the Raton Pass Crossing...From a Las Vegas Housetop...Occupation of Santa Fe...Santo Domingo Pueblo.

August 2, 1846. I looked in the direction of Bent's Fort,[1] and saw a huge United States flag flowing to the breeze, and straining every fibre of an ash pole planted over the centre of a gate. The mystery was soon revealed by a column of dust to the east, advancing with about the velocity of a fast walking horse—it was "the Army of the West." I ordered my horses to be hitched up, and, as the column passed, took my place with the staff.

A little below the fort the river was forded without difficulty, being paved with well attritioned pebbles of the primitive rock, and not more than knee deep.

We advanced five miles along the river, where its bed slides over a black, carbonaceous shale, which has been mistaken for coal, and induced some persons to dig for it.

Here we turned to the left, and pursued our course over an arid, elevated plain, for twenty miles, without water. When we reached the Timpas, we found the water in puddles, and the grass bad.

Colonel Doniphan was ordered to pursue the Arkansas to near the mouth of the Timpas, and rejoin the army by following the bed of that stream.

Near where we left the Arkansas we found, on the side of the slope, several singular demi-spheroids, about the size of an umbrella, coated with carbonate of lime, in pyramidal crystals, which, at a distance, resembled the bubbles of a huge boiling caldron.

Along the Arkansas the principal growth consists of very coarse grass, and a few cotton-woods and willows. The plains were covered with very short grass, Sesleria Dactyloides,[2] now burnt to cinder, and artemisia.

The only animals seen were one black-tailed rabbit and an antelope; both of which were killed.

Our march was 26 miles, that of the army 37; the last 20 miles without water.

The artillery arrived in camp about 11, p. m.; both men and horses were parched with thirst. The teamsters, who had to encounter the dust, suffered very much. When water was near, they sprang from their seats and ran for it like mad men. Two horses sank under this day's march.

Our ascent was considerable to-day. The height, indicated by the barometer, being 4,523 feet above the level of the sea.

August 3. We ascended the Timpas six and three-quarter miles, and halted for the day near running water; the grass was all burned dry, and not a green sprig to be seen. Three buttes were passed, of singular appearance; some idea of which will be given by the sketch.* They were composed of limestone, and were garnished at their bases with nodules of carbonate of lime, like those described yeseterday. A part of our road was on the dry bed of a river, paved with argillaceous limestone, containing, now and then, the impression of oyster shells very distinctly. The valley in which we encamped presented the appearance of a crater, being surrounded with buttes, capped with stunted cedar. The stratification, however, appeared regular, and to correspond on different sides of the valley.

only observat: of prehistoric life

The growth of to-day was similar to that found on the plains yesterday, to which may be added an evergreen and a magnificent cactus[3] three feet high, with round limbs shaped like a rope, three and a half inches in diameter, branching at right angles. It is said the Mexicans make hedges of it.

Colonel Doniphan's regiment passed our camp about 4, p. m.

The water was in pools, charged with vegetable matter and salt.

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* Not reproduced.

The formation of the adjacent hills was distinct; first a stratum of lime-stone, ten feet thick, then hard sandstone, with ammonites and a variety of other shells, &c., overlaying blue marle. From the sides of the hills protruded geodes, with crystallized limestone, and the ground was everywhere strewed with detached pieces of ferruginous sandstone. On these hills we found cedar growing, very stunted; Missouri flax; several varieties of wild currants; a very stunted growth of plums; moss and cacti in great variety, but diminutive.

The latitude of this camp, by nine observations on Polaris, out of the meridian, is 37° 44′ 56″.

The longitude derived from the chronometer, by an estimate of the local time derived from eight measurements of the double altitude of Arcturus on the west, and seven of Alpha Aquilæ in the east, is 6*h*. 54*m*. 06.7*s*.

The barometer reading indicates a height above the sea of 4,761 feet.

August 4. The road wound through the valley of the Timpas. The soil, being impregnated with lime, rendered the dust, which rose in dense columns, distressing.

Dwarfed cedar skirted the road on each side. The strata of hills on either side of the valley were the same as described yesterday; but the ferruginous nodules and blocks of sandstone were more frequent.

Thirteen miles' march brought us to the crossing of the Timpas. The only water we found there was in a hole 40 feet in diameter, into which the men rushed with great eagerness, disturbing the vegetable deposit formed on its surface, and thereby rendering it unfit for use. Nine miles further on we came to "the hole in the rock"—a large hole filled with stagnant, though drinkable, water.

We saw at times during the day a few antelopes, rabbits, wild horses, jack daws, meadow larks, and king birds. The pasture was so bad that Colonel Kearny determined to march to the "hole in the prairie," the neighborhood of which, though said to be destitute of water, affords some dry grass.

We passed a dead horse belonging to the infantry, black with crows, and a wolf in their midst, quietly feeding on the carcass. This gave us unpleasant forebodings for our noble, but now attenuated, horses.

We reached the "hole in the prairie" at 10, p. m., the distance being 14½ miles, and found grass, as we expected: we were agreeably surprised to find water also. The night was delicious, and all slept in the open air. The infantry were encamped here.

The total distance to-day was 36 miles. The horses were now falling away in an alarming manner, but the mules seem to require the stimulus of distention, and nothing else: this the dry grass affords.

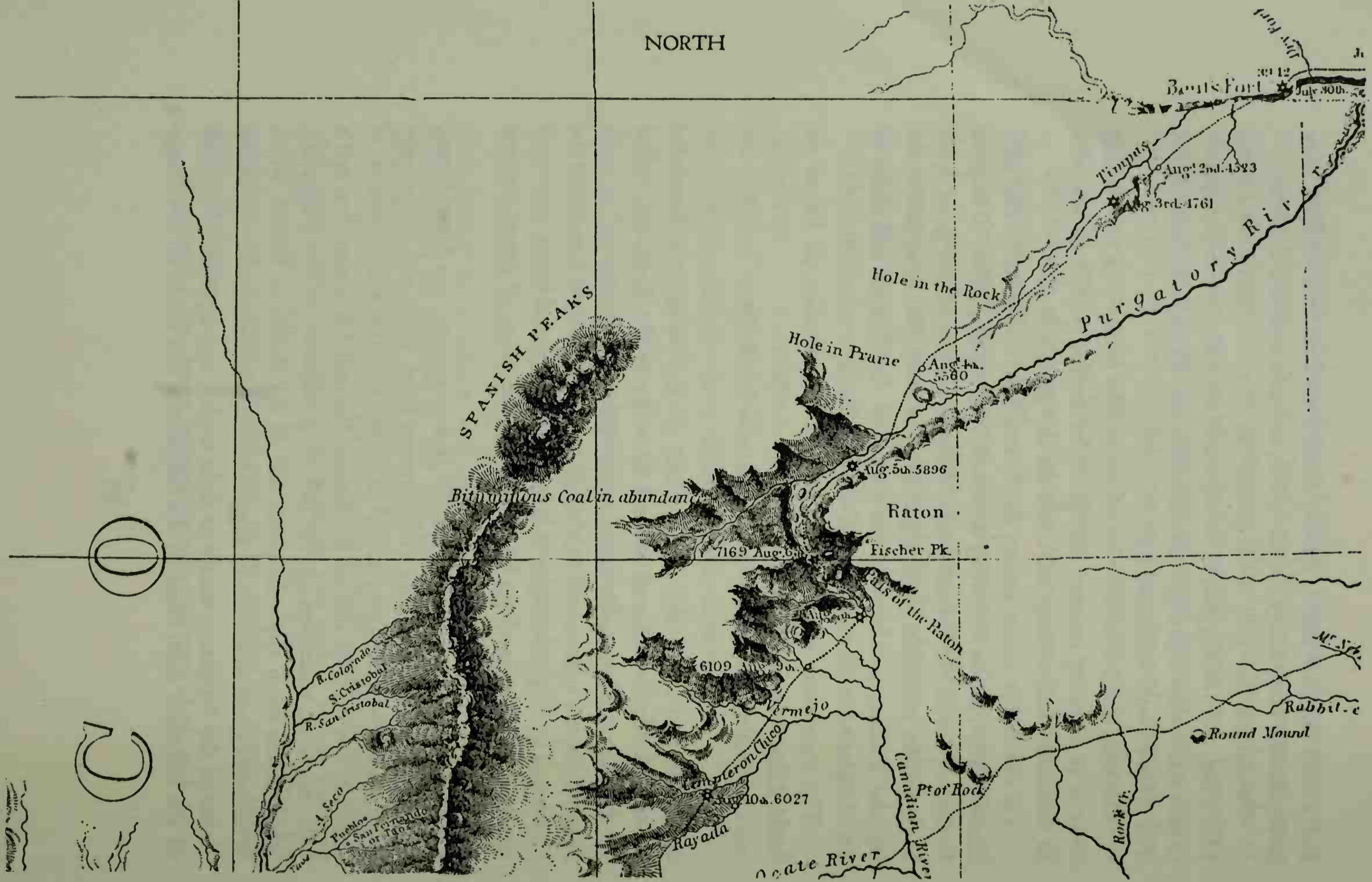
On the march, about sunset, the Wattahyah[4] (twin hills) rose suddenly to view, south 75° west; and then Pike's peak, 20 or 30 degrees farther to north. At the same time the dim outline of the great spine of the Rocky mountain chain began to show itself. We were now crossing the dividing line between the waters of the Timpas and those of the Purgatory, or Los Animos, of the Spaniards.

The vegetation was the same as that of yesterday, as far as we could judge from its burned and parched condition.

The height of this camp was found to be 5,560 feet.

August 5. To-day we descended eleven and a half miles, and reached the valley of the Purgatory, called by the mountain men, Picatoire, a corruption of Purgatoire,[5] a swift running stream, a few yards in width, but no grass of any amount at the crossing. The blighted trunks of large cotton-wood and locust trees were seen for many miles along its course, but the cause of decay was not apparent.

The growth of the bottom, which is very narrow, was black locust, the everlasting cotton-wood, wild currants, hops, plum and grape, artemisia, clematis Virginiana, salix,[6] in many varieties and a species of angelica, but no fruit was on the bushes. Beyond this stream five and a half miles, we encamped on the bed of a tributary to the Purgatory, which comes down from the north side of the Raton, or Mouse, which is the name given to a chain of ragged looking mountains that strikes the course of the Purgatory nearly at right angles, and separates the waters of the Arkansas from those of the Canadian. The banks of the Purga-


NORTH
Bent's Fort
July 30th.
Timpas
Aug. 2nd. 4523
Aug. 3rd. 4761
Purgatory River
Hole in the Rock
Hole in Prairie
Aug. 4th. 5580
Aug. 5th. 5896
Raton
Fischer Pk.
7169 Aug. 6th.
Pass of the Raton
SPANISH PEAKS
Bituminous Coal in abundance
6109 Aug. 9th.
Vermejo
Canadian River
Pt. of Rock
Rock Cr.
Round Mound
Rabbit
Mt. Nebo
Campleron Chico
Aug. 10th. 6027
Rayada
Ocate River
R. Colorado
S. Cristobal
R. San Cristobal
A. Seco
Pueblos
San Fernando or Taos
Taos

July 30th, 1846, to August 10th.

tory, where this stream debouches, begin to assume something of a mountain aspect, different from scenery in the States. The hills are bare of vegetation, except a few stunted cedars; and the valley is said to be, occasionally, the resort of grizzly bear, turkeys, deer, antelope, &c.

Passing the rear wagons of the infantry, we found their horses almost worn out, and the train followed by wolves.

Captain Cooke, of the 1st dragoons, was sent ahead the day before yesterday, to sound Armijo. Mr. Liffendorfer, a trader, married to a Santa Fé lady, was sent in the direction of Taos, with two Pueblo Indians, to feel the pulse of the Pueblos and the Mexican people, and, probably, to buy wheat if any could be purchased, and to distribute the proclamations of the colonel commanding.

Yesterday, Wm. Bent and six others, forming a spy-guard, were sent forward to reconnoitre the mountain passes. In this company was Mr. F. P. Blair., jr., who had been in this country some months, for the benefit of his health.

Measured 13 double altitudes of Polaris, in the north, for latitude, and 7 of Aquila, in the east, for local time, and the resulting latitude is 37° 12′ 10″, and longitude 6*h*. 56*m*. 48*s*. The height indicated by the barometer is 5,896 feet.

August 6. Colonel Kearny left Colonel Doniphan's regiment and Major Clarke's artillery at our old camp-ground of last night, and scattered Sumner's dragoons three or four miles up the creek, to pass the day in renovating the animals by nips at the little bunches of grass spread at intervals in the valleys. This being done, we commenced the ascent of the Raton,[7] and, after marching 17 miles, halted with the infantry and general staff, within a half mile of the summit of the pass. Strong parties were sent forward to repair the road, which winds through a picturesque valley, with the Raton towering to the left. Pine trees here obtain a respectable size, and lined the valley through the whole day's march. A few oaks, (Quercus Olivaformis,) big enough for axles, were found near the halting-place of tonight. When we first left the camp this morning, we saw several clumps of the piñon, (Pinus edulis.) It bears a resinous nut, eaten by Mexicans and Indians.

We found also the Lamita in great abundance. It resembles the wild currant, and is, probably, one of its varieties; grows to the height of several feet, and bears a red berry, which is gathered, dried, pounded, and then mixed with sugar and water, making a very pleasant drink, resembling currant cordial. We were unfortunate in not being able to get either the fruit or flower. Neither this plant, the piñon, nor any of the plum trees, nor grape vines, had any fruit on them; which is attributable to the excessive drought. The stream, which was last year a rushing torrent, is this year dry, and in pools.

The view from our camp is inexpressibly beautiful, and reminds persons of the landscapes of Palestine. Without attempting a description, I refer to the sketch.

The rocks of the mountain were chiefly a light sandstone—in strata, not far from horizontal; and the road was covered with many fragments of volcanic rocks, of purplish brown color, porous, and melting over a slow fire.

The road is well located. The general appearance is something like the pass at the summit of the Boston and Albany railroad, but the scenery bolder, and less adorned with vegetation.

coal mining
central

An express returned from the spy-guard, which reported all clear in front. Captain Cooke and Mr. Liffendorfer have only reached the Canadian river. It was reported to me that, at Captain Sumner's camp, about 7 miles above where we encamped last night, and 12 miles from the summit, an immense field of coal crops out; this seam being 30 feet deep. To-night our animals were refreshed with good grass and water.

Nine observations on Polaris give, for the latitude of the place, 37° 00′ 21″.

Seven on Arcturus, in the west, and 7 on Alpha Aquilæ, in the east, give the chronometric longitude 6*h*. 57*m*. 01.35*s*.

Height above the sea, 7,169 feet.

August 7, camp 36. We recommenced the ascent of the Raton, which we reached with ease, with our wagons, in about two miles. The height of this point above the sea, as indicated by the barometer, is 7,500 feet. From the summit we had a beautiful view of Pike's peak, the Wattahyah, and the chain of mountains running south from the Wattahyah. Several large white masses were discernible near the summits of the range, which we at first took for snow, but which, on examination with the telescope, were found to consist of white limestone, or granular quartz, of which we afterwards saw so much in this country. As we drew near, the view was no less imposing. To the east rose the Raton, which appeared still as high as from the camp, 1,500 feet below. On the top of the Raton the geological formation is very singular, presenting the appearance of a succession of castles. As a day would be required to visit it, I was obliged to forego that pleasure, and examine it merely with the glass. The mountain appears to be formed chiefly of sandstone, disposed in strata of various shades of color, dipping gently to the east, until you reach near the summit, where the castellated appearance commences, the sides become perpendicular, and the seams vertical. The valley is strewed with pebbles and fragments of trap rock, and the fusible rock described yesterday, cellular lava, and some pumice.

For two days our way was strewed with flowers; exhilarated by the ascent, the green foliage of the trees in striking contrast with the deserts we had left behind, they were the most agreeable days of the journey.

There is said to be a lake, about ten miles to the east of the summit, where immense hordes of deer, antelope, and buffalo congregate, but may be doubted.

The descent is much more rapid than the ascent, and, for the first few miles, through a valley of good burned grass and stagnant waters, containing many beautiful flowers. But frequently you come to a place where the stream (a branch of the Canadian) has worked itself through the mountains, and the road has to ascend and then descend a sharp spur. Here the difficulties commence; and the road, for three or four miles, is just passable for a wagon; many of the train were broken in the passage. A few thousand dollars judiciously expended here, would be an immense saving to the government, if the Santa Fé country is to be permanently occupied, and Bent's Fort road adopted. A few miles from the summit we reached a wide valley where the mountains open out, and the inhospitable looking hills recede to a respectable distance to the right

road improvem

and left. Sixteen miles from camp 36 brought us to the main branch of the Canadian, a slow running stream, discharging a volume of water the thickness of a man's waist. We found here Bent's camp. I dismounted under the shade of a cotton-wood, near an ant-hill, and saw something black which had been thrown out by the busy little insects; and, on examination, found it to be bituminous coal, lumps of which were afterwards found thickly scattered over the plain. After crossing the river, and proceeding about a mile and a quarter, I found the party from which I had become separated encamped on the river, with a plentiful supply of grass, wood, and water; and here we saw, for the first time, a few sprigs of the famous grama,[8] (*Atheropogon Oligostachyum.*)

coal

The growth on to-day's march was piñon in small quantities, scrub oak, scrub pine, a few lamita bushes, and, on the Canadian, a few cotton-wood trees; except at the camp, there was little or no grass. The evening threatened rain, but the clouds passed away, and we had a good night for observations. We have had no rain since we left Cow creeks, thirty days ago.

We are now in what may be called the paradise of that part of the country between Bent's Fort and San Miguel; and yet he who leaves the edge of the Canadian or its tributaries must make a good day's march to find food, water, or grass.

There may be mineral wealth in these mountains, but its discovery must be left to some explorer not attached to the staff of an army making forced marches into an enemy's country.

an
years to find
th i. work

To-day commenced our half-rations of bread; though not suffering for meat, we are anxious to seize on Santa Fé and its stock of provisions as soon as possible.

August 8. We remained in camp all day to allow Colonel Doniphan's regiment and the artillery to come up. During the day, we had gusts of wind, and clouds discharging rain to the west. Captain Sumner drilled his three squadrons of dragoons, and made quite an imposing show.

The latitude of the camp is 36° 47′ 34″; the longitude 6*h*. 56*m*. 59.7*s*.

On the 7th, I measured 8 altitudes of Arcturus in the west, and 8 of Alpha Aquilæ in the east; and, on the 8th, 10 of Arcturus and 8 of Alpha Aquilæ—showing the rate of chronometer 783 to be losing 3*s*. per day. The height determined approximately, is 6,112 feet above the sea.

August 9. We broke up camp at 2½ o'clock, and marched with the colonel's staff and the first dragoons 10½ miles, and encamped under the mountains on the western side of the Canadian, on the banks of a small stream, a tributary of the Canadian. The grass was short, but good; the water in small quantities, and in puddles. Here we found a trap-dyke[9]—course north 83 west—which shows itself on the Canadian, about four miles distant, in the same course.

At the distance of six miles from last night's camp, the road forks—one branch running near the mountains to the west, but nearly parallel to the old road, and never distant more than four miles, and almost all the time in sight of it. The army was divided—the artillery, infantry, and wagon train ordered to take the lower, and the Missouri volunteers and first dragoons the upper road. The valley here opens out into an extensive plain, slightly rolling, flanked on each side by ranges of perpendicular hills, covered with stunted cedar and the piñon. In this extensive valley or plain may be traced by the eye, from any of the neighboring heights, the valleys of the Canadian and its tributaries, the Vermejo, the Poni, the Little Cimarron, the Rayada, and the Ocaté. We saw troops of antelopes, horses, deer, &c.; cacti in great abundance, and in every variety; also, a plant which Dr. De Camp pointed out as being highly balsamic; having collected quantities of it during his campaign to the Rocky mountains, and tested its efficacy as a substitute for Balsam Cop.[10]

To-night we observed a great number of insects, the first remarked since leaving the Arkansas. Birds were equally rare, with the exception of the cow-bunting, which has been seen in great numbers on the whole route, and in a state so tame as to often alight on our horses. The horned frog (Agama Cornuta) also abounds here, as well as on the route westward from Chouteau's island.

horny toad?.

August 10. Colonel Kearny was dissatisfied with the upper road, and determined to strike for the old road. We did so after reaching the Vermejo, 9½ miles in a diagonal line, and rejoined it at the crossing of the Little Cimarron, where we found the infantry encamped—total distance 20½ miles. The grass good, and water plenty, though not flowing. Another trap-dyke, parallel nearly to the last, and three miles distant, presented its wall-like front. It was strewed with fragments of ferruginous sandstone and crystalized carbonate of lime.

A Mexican came into camp from Bent's Fort, and reported Lieutenant Abert much better. Colonel Kearny allowed him to pass to Taos, which place (60 miles distant by a bridle path) he expected to reach to-night. The colonel sent by him copies of his proclamation.

Five Mexicans were captured by Bent's spy company; they were sent out to reconnoitre our forces, with orders to detain all persons passing *out* of New Mexico. They were mounted on diminutive asses, and presented a ludicrous contrast by the side of the big men and horses of the
? first dragoons. Fitzpatrick, our guide, who seldom laughs, became almost convulsed whenever he turned his well practised eye in their direction.

Mr. Towle, an American citizen, came to head-quarters at the Vermejo, and reported himself just escaped from Taos. He brought the intelligence that, yesterday, the proclamation of Governor Armijo reached there, calling the citizens to arms, and placing the whole country under martial law; that Armijo has assembled all the Pueblo Indians, numbering about 2,000, and all the citizens capable of bearing arms; that 300 Mexican dragoons arrived in Santa Fé the day Armijo's proclamation was issued, and that 1,200 more were hourly expected; that the Mexicans, to a man, were anxious for a fight, but that half the Pueblo Indians were indifferent on the subject, but would be made to fight.

A succession of thunder storms passed yesterday to the north and west, but did not reach us. The ground indicates recent rain, as also does the grass, which looks as in the spring, just sprouting. The hills to the left, as near as I can judge, the same as in the Raton, were of different colored sandstone, regularly stratified, and dipping gently to the east, topped by a mural precipice of green stone. The growth on the mountains, piñon and cedar. On the plains, which are covered with scoriæ, scarcely a tree is to be seen.

We encamped on the Little Cimarron, and observed at night for latitude and time. 7 altitudes of Polaris give for the latitude 36° 27′ 50″; 7 on Arcturus in the west, and the same number on Alpha Aquilæ in the east, give the meridian by chronometer differences 6*h*. 58*m*. 39*s*. Approximate height 6,027 feet.

August 11. We made a long march to-day with the advanced guard and the 1st dragoons, to the Ocaté $31\,^2/_3$ miles. The road approaches the Ocaté, at the foot of a high bluff to the north, where the river runs through a cañon, making it inaccessible to animals. We ascended the river for four or five miles, to where the road crosses; there we left the road, and at that point, the river being dry, continued to ascend it a mile, and found good grass, and, occasionally, running water. The scenery to-day was very pretty, sometimes approaching to the grand; the road passed through a succession of valleys, and crossed numerous "divides" of the Rayada and Ocaté. The Rayada is a limpid running stream, ten miles from the Little Cimarron, the first of the kind noted, though we have been traversing the bases of many mountains for days past. The pasture, however, is not good. At points two and four miles farther, at the foot of the mountains, there are springs and good grass. At the last point we overtook the infantry, where they halted. About five miles before reaching the Ocaté, the road descends into a valley, overhung by confused and rugged cliffs, which give promise of grass and water; but, on going down, we found that this beautiful valley had no outlet, but terminated in a salt lake. The lake is now dry, and its bed is white with a thin saline encrustation. Here the road is indistinct, and takes a sudden turn to the left. At this moment we discovered coming towards us, at full speed, Bent's spy-guard. All thought they had met the enemy; I was ordered to ride forward to meet them, followed by Mr. Fitzpatrick and two dragoons. It proved to be a false alarm; they had missed their road, and were galloping back to regain it.

alkaline?

The hills are composed principally of basalt and a porous volcanic stone, very hard, with metallic fracture and lustre, traversed by dykes of trap. The lava is underlayed by sandstone. From the uniform height of these hills, one would think they originally formed the table land, and that the valleys had been formed by some denuding process, and their limits determined by the alternate existence or non-existence of the hard crust of volcanic rocks.

can official
sistance

Matters are now becoming very interesting. Six or eight Mexicans were captured last night, and on their persons was found the proclamation of the Prefect of Taos, based upon that of Armijo, calling the citizens to arms, to repel the "Americans, who were coming to invade their soil and destroy their *property and liberties*;" ordering an enrolment of all citizens over 15 and under 50. It is decidedly less bombastic than any Mexican paper I have yet seen. Colonel Kearny assembled these prisoners, altogether some ten or twelve, made a speech to them, and ordered that, when the rear guard of the army should have passed, they should be released. These men were not deficient in form or stature; their faces expressed good nature, bordering on idiocy; they were mounted on little donkies and jennies, guided by clubs instead of bridles.

Mexican
ry acceptance

Two or more Mexicans, of a better class, were captured to-night, or rather they came into camp. Their story was, that they had come out by order of the alcalde of the Moro[11] town to look out for their standing enemies, the Eutaws, who were reported in the neighborhood. That they had heard of our advance some time since, but believed us to be at the Rayada, 22 miles back; but seeing our wagons, and having faith in the Americans, they rode without hesitation into our camp. When they said they had faith in us, the colonel ordered them to shake hands with him. They were ordered to be detained for a day or two, for it was quite evident to all they were spies, who had come too suddenly into the little ravine in which we were encamped.

They appeared well pleased, and one of them, after proceeding a few steps with the guard, turned back and presented the colonel with a fresh cream cheese.

The grass was interspersed with a great variety of new and beautiful flowers, &c., &c. The hills were sparsely covered with cedar and piñon.

Antelopes and horned frogs in abundance, but no other animals were seen.

Height of this camp 6,946 feet.

August 12. The elder Mexican was discharged, giving him two proclamations; one for the alcalde, another for the people of his town. A message was sent to the alcalde to meet us at the crossing of the Moro, with several of his chief men. The other Mexican was retained as a guide. About 12 o'clock the advance was sounded, and the colonel, with Sumner's command, marched 20 miles, and halted in a beautiful valley of fine grass and pools of cool water, where the wild liquorice (Glycyrrhiza Lepidota) grew plentifully. The stream, where flowing, is a tributary of the Moro.

From the drift wood, &c., found in its wide, well-grassed bed, I infer it is subject to great freshets. In crossing from the Ocaté to the valley of the Moro, the mountains become more rolling; and as we approached the Moro, the valley opened out, and the whole country became more tame in its appearance.

Ten miles up the Moro is the Moro town, containing, we were informed, 200 houses.

It is off the road; but a tolerable wagon road leads to the village from our camp of last night.

The plains were strewed with fragments of brick-dust colored lava, scoriæ and slag; the hills, to the left, capped with white granular quartz. The plains are almost destitute of vegetation; the hills bear a stunted growth of piñon and red cedar. Rains have fallen here recently, and the grass in the bottoms is good. The grama is now found constantly. We saw to-day some ground squirrels, with stripes on their sides: in their habits, resembling the common prairie dog. A flight of birds was seen to the south, but too distant to distinguish. We were attracted to the left by an object which was supposed to be an Indian, but, on coming up to it, it was discovered to be a sandstone block standing on end and topped by another shorter block. A mountain man, versed in these signs, said it was in commemoration of a talk and friendly smoke between some two or three tribes of Indians.

Indian interaction

The latitude of the place, from 7 observations on Polaris, is 35° 54′ 21″, and the longitude, deduced from the local time by 7 altitudes of alpha lyræ in the west, and 11 of the sun in the east, was 6*h*. 59*m*. 49*s*.

The height above the sea 6,670 feet.

August 13. At 12 o'clock, as the rear column came in sight, the call of "boots and saddles" was sounded, and in 20 minutes we were off. We had not advanced more than one mile when Bent, one of the spy-guard, came up with four prisoners. They represented themselves to be an ensign and three privates of the Mexican army, sent forward to reconnoitre and ascertain our force. They said 600 men were at the Vegas[12] to give us battle. They told many different stories; and finally delivered up a paper, being an order from a Captain Gonzales to the ensign, to go forward on the Bent's Fort road to ascertain our position and numbers. They were cross-examined by the colonel, and detained.

As soon as we commenced the descent into the valley of the Moro creek, some one reported a company of Mexicans at the crossing; Colonel Kearny ordered me to go forward with twelve of the Laclède rangers, and reconnoitre the party, and if they attempted to run, to pursue and capture as many as we could. As Lieutenant Elliott and myself approached this company, they appeared to be motionless, and on coming up, we found them to consist of nothing but the pine stakes of a corrál. The dragoons were sadly disappointed; they evidently expected either a fight or a chase. Six miles brought us to the first settlement[13] we had yet seen in 775 miles. The first object I saw was a pretty Mexican woman, with clean white stockings, who very cordially shook hands with us and asked for tobacco. In the next house lived Mr. Boney, an American, who has been some time in this country, and is the owner of a large number of horses and cattle, which he manages to keep in defiance of wolves, Indians, and Mexicans. He is a perfect specimen of a generous open-hearted adventurer, and in appearance what, I have pictured to myself, Daniel Boone, of Kentucky, must have been in his day. He drove his herd of cattle into camp and picked out the largest and fattest, which he presented to the army.

Two miles below, at the junction of the Moro and Sapillo, is another American, Mr. Wells, of North Carolina; he has been here but six months, and barring his broad-brimmed sombrero, might have been taken for a sergeant of dragoons, with his blue pantaloons with broad gold-colored stripes on the sides, and his jacket trimmed with lace. I bought butter from him at four bits the pound.

We halted at the Sapillo, distance nine and a half miles from our last night's encampment, in a tremendous shower of rain; the grass was indifferent, being clipped short by the cattle from the rancheria. Wood and water plenty.

At this place a Mr. Spry came into camp, on foot, and with scarcely any clothing. He had escaped from Santa Fé on the night previous, at Mr. H-----'s request, to inform Colonel Kearny that Armijo's forces were assembling; that he might expect vigorous resistance, and that a place called the Cañon, 15 miles from Santa Fé, was being fortified; and to advise the Colonel to go around it.

The cañon is a narrow defile, easily defended, and of which we have heard a great deal. War now seems "inevitable"; and the advantages of ground and numbers will, no doubt, enable the Mexicans to make the fight interesting. The grass was miserable, and the camp ground inundated by the shower of to-day—which was quite a rarity.

Mexican resist

Barometric height 6,395 feet.

August 14. The order of march to-day was that which could easily be converted into the order of battle. After proceeding a few miles we met a queer cavalcade, which we supposed at first to be the looked for alcalde from Moro town, but it proved to be a messenger from Armijo; a lieutenant, accompanied by a sergeant and two privates, of Mexican lancers. The men were good looking enough, and evidently dressed in their best bib and tucker. The creases in their pantaloons were quite distinct, but their horses were mean in the extreme, and the contempt with which our dragoons were filled was quite apparent. The messenger was the bearer of a letter from Armijo. It was a sensible, straightforward missive, and if written by an American or Englishman, would have meant this: "You have notified me that you intend to take possession of the country I govern. The people of the country have risen, en masse, in my defence. If you take the country, it will be because you prove the strongest in battle. I suggest to you to stop at the Sapillo, and I will march to the Vegas. We will meet and negotiate on the plains between them."

The artillery were detained some time in passing the Sapillo. This kept us exposed to the sun on the plains for four hours, but it gave the colonel time to reflect on the message with which he should dismiss the lancers; as there was some apprehension that Captain Cooke was detained, their discharge became a matter for reflection. Sixteen miles brought us in sight of the Vegas, a village on the stream of the same name.

A halt was made at this point, and the colonel called up the lieutenant and lancers and said to them, "The road to Santa Fé is now as free to you as to myself. Say to General Armijo, I shall soon meet him, and I hope it will be as friends."

At parting, the lieutenant embraced the colonel, Captain Turner, and myself, who happened to be standing near.

The country today was rolling, almost mountainous, and covered in places with scoriæ. Grass began to show itslf, and was interspersed with Malva Pedata,[14] and several new species of Geraniaceæ, Bartonia, and convolvulus. The soil was good enough apparently, but vegetation was stunted from the want of rain. As we emerged from the hills into the valley of the Vegas, our eyes were greeted for the first time with waving corn. The stream was flooded, and the little drains by which the fields were irrigated, full to the brim. The dry soil seemed to drink it in with the avidity of our thirsty horses. The village, at a short distance, looked like an extensive brick-kiln. On approaching, its outline presented a square with some arrangements for defence. Into this square the inhabitants are sometimes compelled to retreat, with all their stock, to avoid the attacks of the Eutaws and Navajoes, who pounce upon them and carry off their women, children, and cattle. Only a few days since, they made a descent on the town and carried off 120 sheep and other stock.

and
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an
edations

As Captain Cooke passed through the town some ten days' since, a murder had just been committed on these helpless people. Our camp extended for a mile down the valley; on one side was the stream, on the other the cornfields, with no fence or hedge interposing. What a tantalizing prospect for our hungry and jaded nags; the water was free, but a chain of sentinels was posted to protect the corn, and strict orders given that it should not be disturbed.

Captain Turner was sent to the village to inform the alcalde that the colonel wished to see him and the head men of the town. In a short time down came the alcalde and two captains of militia, with numerous servants, prancing and careering their little nags into camp.

Observations.—9 altitudes of Polaris in the north, 7 of Arcturus in the east, and 7 of alpha Aquilæ in the east.

Latitude 35° 35′ 05″.

Longitude 7*h*. 00*m*. 46*s*.

Height, by the barometer, 6,418 feet.

August 15. 12 o'clock last night information was received that 600 men had collected at the pass which debouches into the Vegas, two miles distant, and were to oppose our march. In the morning, orders were given to prepare to meet the enemy. At 7, the army moved, and just as we made the road leading through the town, Major Swords, of the quartermaster's department, Lieutenant Gilmer, of the engineers, and Captain Weightman joined us, from Fort Leavenworth, and presented Colonel Kearny with his commission as brigadier general in the Army of the United States. They had heard we were to have a battle, and rode sixty miles during the night to be in it.

Kearny's commission

At eight, precisely, the general was in the public square, where he was met by the alcalde and the people, many of whom were mounted; for these people seem to live on horseback.

The general pointed to the top of one of their houses, which are built of one story, and suggested to the alcalde that if he would go to that place, he and his staff would follow, and, from that point, where all could hear and see, he would speak to them; which he did, as follows:

"Mr. Alcalde, and people of New Mexico: I have come amongst you by the orders of my government, to take possession of your country, and extend over it the laws of the United States. We consider it, and have done so for some time, a part of the territory of the United States. We come amongst you as friends—not as enemies; as protectors—not as conquerors. We come among you for your benefit—not for your injury.

"Henceforth I absolve you from all allegiance to the Mexican government, and from all obedience to General Armijo. He is no longer your governor; (great sensation.) I am your governor. I shall not expect you to take up arms and follow me, to fight your own people, who may oppose me; but I now tell you, that those who remain peaceably at home, attending to their crops and their herds, shall be protected by me, in their property, their persons, and their religion; and not a pepper, not an onion, shall be disturbed or taken by my troops, without pay, or by the consent of the owner. But listen! he who promises to be quiet, and is found in arms against me, I will hang!

"From the Mexican government you have never received protection. The Apaches and the Navajoes come down from the mountains and carry off your sheep, and even your women, whenever they please. My government will correct all this. It will keep off the Indians, protect you in your persons and property; and, I repeat again, will protect you in your religion. I know you are all great Catholics; that some of your priests have told you all sorts of stories—that we should ill-treat your women, and brand them on the cheek as you do your mules on the hip. It is all false. My government respects your religion as much as the Protestant religion, and allows each man to worship his Creator as his heart tells him is best. Its laws protect the Catholic as well as the Protestant; the weak as well as the strong; the poor as well as the rich. I am not a Catholic myself—I was not brought up in that faith; but, at least one-third of my army are Catholics, and I respect a good Catholic as much as a good Protestant.

ises!!
omises!

"There goes my army—you see but a small portion of it; there are many more behind—resistance is useless.

"Mr. Alcalde, and you two captains of militia, the laws of my country require that all men who hold office under it shall take the oath of allegiance. I do not wish, for the present, until affairs become more settled, to disturb your form of government. If you are prepared to take oaths of allegiance, I shall continue you in office, and support your authority."

This was a bitter pill; but it was swallowed by the discontented captain, with downcast eyes. The general remarked to him, in hearing of all of the people: "Captain, look me in the face, while you repeat the oath of office." The hint was understood—the oath taken, and the alcalde and the two captains pronounced to be continued in office. The people were enjoined to obey the alcalde, &c., &c. The citizens grinned, and exchanged looks of satisfaction, but seemed not to have the boldness to express what they evidently felt—that their burdens, if not relieved, were, at least, shifted to some ungalled part of the body.

We descended by the same rickety ladder by which we had climbed to the tops of the houses, mounted our horses, and rode briskly forward to encounter our 600 Mexicans in the gorge of the mountains, two miles distant.

The sun shone with dazzling brightness; the guidons and colors of each squadron, regiment, and battalion, were for the first time unfurled. The drooping horses seemed to take courage from the gay array. The trumpeters sounded "to horse," with spirit, and the hills multiplied and re-echoed the call. All wore the aspect of a gala day; and as we approached the gorge, where we expected to meet the enemy, we broke into a brisk trot, then into a full gallop, preceded by a squadron of horse. The gorge was passed, but no person seen.

One by one the guidons were furled; the men looked disappointed, and a few minutes found us dragging our slow lengths along, with the usual indifference in regard to every subject, except that of overcoming space.

Two miles further along brought us to another pass, as formidable as the first, and all the intermediate country was broken, and covered with a dense growth of pine, piñon, and cedar. Here the mountains began to rise to the height of a thousand feet above the road. Nine miles more, brought us to Tacoloté.[15]

Here we met the alcalde and the people, in the cool and spacious residence of the former, where the drama just described, was again enacted. This time it was graced by the presence of the women, with their bare ankles, round, plump arms, and slippered feet.

We marched ten miles farther, to the Vernal springs, and halted at the upper spring, and observed for time and latitude about 500 feet south of the upper spring.

Observed 9 altitudes of Polaris, 7 of Alpha Aquilæ, and 7 of Arcturus. Latitude 35° 23′ 19″, longitude 7*h*. 01*m*. 23*s*.

Height indicated by the barometer 6,299 feet.

August 16. We marched to San Miguel, where General Kearny assembled the people and harangued them much in the same manner as at the Vegas.

Reports now reached us at every step that the people were rising, and that Armijo was collecting a formidable force to oppose our march at the celebrated pass of the cañon, 15 miles from Santa Fé. About the middle of the day's march the two Pueblo Indians, previously sent in to sound the chief men of that formidable tribe, were seen in the distance, at full speed, with arms and legs both thumping into the sides of their mules at every stride. Something was now surely in the wind. The smaller and foremost of the two dashed up to the general, his face radiant with joy, and exclaimed, "they are in the Cañon, my brave, pluck up your courage and push them out." As soon as his extravagant delight at the prospect of a fight, and the pleasure of communicating the news, had subsided, he gave a pretty accurate idea of Armijo's force and position.

The road passed over to-day was good, but the face of the country exceedingly rugged, broken, and covered with piñon and cedar. To the left, one or two miles distant, towers a wall, nearly perpendicular, 2,000 feet high, apparently level on the top, and showing, as near as I could judge from the road, an immense stratum of red earth.[16]

We turned from the road to the creek, where there were a few rancherias, to encamp; at which place we passed an uncomfortable night, the water being hard to reach, and the grass very bad.

Barometric height 6,346 feet.

August 17. The picket guard, stationed on the road, captured the son of Saliza, who, it is said, is to play an important part in the defence of this country, and the same who behaved so brutally to the Texan prisoners.[17] The son was at San Miguel yesterday, and heard from a concealed place all that passed. It is supposed, at this time, he was examining the position, strength, &c., of our army to report to his father.

A rumor has reached camp that the 2,000 Mexicans assembled in the Cañon to oppose us, have quarreled among themselves; that Armijo, taking advantage of the dissensions, fled with his dragoons and artillery to the south. He has long been suspected of wishing an excuse to fly. It is well known he has been averse to a battle, but some of his people threatened his life if he refused to fight. He has been, for some days, more in fear of his own people than of the American army. He has seen what they are blind to; the hopelessness of resistance.

As we approached the ruins of the ancient town of Pecos, a large, fat fellow, mounted on a mule, came towards us at full speed, and extending his hand to the general, congratulated him on the arrival of himself and army. He said, with a roar of laughter, "Armijo and his troops have gone to hell, and the Cañon is all clear." This was the alcalde of the settlement, two miles up the Pecos from the ruins, where we encamped, 15¾ miles from our last camp, and two miles from the road.

Pecos, once a fortified town, is built on a promontory or rock, somewhat in the shape of a foot. Here burned, until within seven years, the eternal fires of Montezuma, and the remains of the architecture exhibit, in a prominent manner, the engraftment of the Catholic church upon the ancient religion of the country. At one end of the short spur forming the terminus of the promontory, are the remains of the "*estuffa*,"[18] with all its parts distinct; at the other are the remains of the Catholic church, both showing the distinctive marks and emblems of the two religions. The fires from the "*estuffa*" burned and sent their incense through the same altars from which was preached the doctrine of Christ. Two religions so utterly different in theory, were here, as in all Mexico,

aztec relics

compatibility of Cath & Aztec

blended in harmonious practice until about a century since, when the town was sacked by a band of Indians.

[illegible]

Amidst the havoc of plunder of the city, the faithful Indian managed to keep his fire burning in the "*estuffa*"; and it was continued till a few years since—the tribe became almost extinct. Their devotions rapidly diminished their numbers, until they became so few as to be unable to keep their immense estuffa (forty feet in diameter) replenished, when they abandoned the place and joined a tribe of the original race over the mountains, about sixty miles south. There, it is said, to this day they keep up their fire, which has never yet been extinguished. The labor, watchfulness, and exposure to heat consequent on this practice of their faith, is fast reducing this remnant of the Montezuma race; and a few years will, in all probability, see the last of this interesting people. The acompanying sketches will give a much more accurate representation of these ruins than any written descriptions. The remains of the modern church, with its crosses, its cells, its dark mysterious corners and niches. differ but little from those of the present day in New Mexico. The architecture of the Indian portion of the ruins present peculiarities worthy of notice.

Both are constructed of the same materials; the walls of sun-dried brick, the rafters of well-hewn timber, which could never have been hewn by the miserable little axes now used by the Mexicans, which resemble, in shape and size, the wedges used by our farmers for splitting rails. The cornices and drops of the architrave in the modern church, are elaborately carved with a knife.

To-night we found excellent grass on the Rio Pecos, abreast of the ruins where the modern village of Pecos is situated, with a very inconsiderable population.

August 18. We were this morning 29 miles from Santa Fé. Reliable information, from several sources, had reached camp yesterday and the day before, that dissensions had arisen in Armijo's camp, which had dispersed his army, and that he had fled to the south, carrying all his artillery and 100 dragoons with him. Not a hostile rifle or arrow was now between the army and Santa Fé, the capital of New Mexico, and the general determined to make the march in one day, and raise the United States flag over the palace before sundown. New horses or mules were ordered for the artillery, and everything was braced up for a forced march. The distance was not great, but the road bad, and the horses on their last legs.

A small detachment was sent forward at day-break, and at six the army followed. Four or five miles from old Pecos the road leads into a cañon, with hills on each side from 1,000 to 2,000 feet above the road, in all cases within cannon shot, and in many within point blank musket shot; and this continues to a point but 12 or 15 miles from Santa Fé.

The scenery is wild; the geological formation much the same as before described, until you begin to descend towards the Del Norte,[19] when granitic rocks and sands are seen in great abundance on the road as far as Santa Fé. Cedar, piñon, and a large growth of long-leafed pine are densely crowded wherever the rock affords a crevice, until within six or eight miles of the town. Fifteen miles from Santa Fé we reached the position deserted by Armijo. The topographical sketch, by Lieutenant Peck, will give some idea of it. It is a gateway which, in the hands of a skillful engineer and one hundred resolute men, would have been perfectly impregnable.

Had the position been defended with any resolution, the general would have been obliged to turn it by a road which branches to the south, six miles from Pecos, by the way of Galisteo.

Armijo's arrangements for defence were very stupid. His abattis was placed behind the gorge some 100 yards, by which he evidently intended that the gorge should be passed before his fire was opened. This done, and his batteries would have been carried without difficulty.

Before reaching the cañon the noon halt was made in a valley covered with some grama, and the native potato in full bloom. The fruit was not quite as large as a wren's egg. As we approached the town, a few straggling Americans came out, all looking anxiously for the general, who, with his staff, was clad so plainly, that they passed without recognizing us. Another officer and myself were sent down to explore the by-road by which Armijo fled. On our return to the main road, we saw two Mexicans; the one the acting secretary of state, in search of the general.

They had passed him without knowing him. When we pointed in the direction of the general, they broke into a full run; their hands and feet keeping time to the pace of their nags. We followed in a sharp trot; and, as we thought, at a respectable distance. Our astonishment was great to find, as they wound through the ravine through the open well-grown pine forest, that they did not gain on us perceptibly. "Certainly they are in a full run, and as certainly we are only in a trot," we both exclaimed. I thought we were under some optical delusion, and turned to my servant to see the pace at which he was going. "Ah!" said he, "those Mexican horses make a mighty great doing to no purpose." That was a fact; with their large cruel bits, they harass their horses into a motion which enables them to gallop very long without losing sight of the starting place.

The acting secretary brought a letter from Vigil, the lieutenant governor, informing the general of Armijo's flight, and of his readiness to receive him in Santa Fé, and to extend to him the hospitalities of the city. He was quite a youth, and dressed in the fashion of the Americans. Here, all persons from the United States are called Americans, and the name is extended to no other race on the continent. To-day's march was very tedious and vexatious; wishing to enter Santa Fé in an imposing form, frequent halts were made to allow the artillery to come up. Their horses almost gave out, and during the day mule after mule was placed before the guns, until scarcely one of them was spared.

The head of the column arrived in sight of the town about three o'clock; it was six before the rear came up. Vigil and twenty or thirty of the people of the town received us at the palace and asked us to partake of some wine and brandy of domestic manufacture. It was from the Passo[20] del Norte; we were too thirsty to judge of its merits; anything liquid and cool was palatable. During the repast, and as the sun was setting, the United States flag was hoisted over the palace, and a salute of thirteen guns fired from the artillery planted on the eminence overlooking the town.

The ceremony ended, we were invited to supper at Captain -------'s, a Mexican gentleman, formerly in the army. The supper was served very much after the manner of a French dinner, one dish succeeding another in endless variety. A bottle of good wine from the Paso del Norte, and a loaf of bread was placed at each plate. We had been since five in the morning without eating, and inexhaustible as were the dishes was our appetite.

August 19. I received an order to make a reconnoissance of the town and select a site for a fort, in co-operation with Lieutenant Gilmer, of the engineers. This occupied me diligently on the 19th and 20th, and on the 21st the general was furnished with the map, a copy of which is sent to the adjutant general and another to the Bureau of Topographical Engineers.

The site selected and marked on the map is within 600 yards of the heart of the town, and is from 60 to 100 feet above it. The contour of grounds is unfavorable for the trace of a regular work, but being the only point which commands the entire town, and which is itself commanded by no other, we did not hesitate to recommend it. The recommendation was approved. On the 22d we submitted a complete plan of the work, which was also approved. It is computed for a garrison of 280 men.

On the 23d, the work was commenced with a small force; on the 27th, 100 laborers were set to work on it, detailed from the army; and, on the 31st, 20 Mexican masons were added.

As it was determined to send an express to the States on the 25th, I commenced to project and plot my map of the route of the Army of the West, that the government might have at once the benefit of my labors. It was rather a bold undertaking to compress, in a few days, the work of months. My astronomical observations were brought up from day to day as we advanced on the march, without which the undertaking would have been impracticable. We all worked day and night, and, with the assistance of several gentlemen of the volunteers, I succeeded in accomplishing the work; not, however, in a very satisfactory manner.

Events now begin to crowd on each other in quick succession, but my duties keep me so constantly occupied in my office and in the field, that I cannot chronicle them in regular order or enter much upon details. On the morning of the 19th, the general assembled all the people in the plaza and addressed them at some length.

The next day, the chiefs and head men of the Pueblo Indians came to give in their adhesion and express their great satisfaction at our arrival. This large and formidable tribe are amongst the best and most peaceable citizens of New Mexico. They, early after the Spanish conquest, embraced the forms of religion, and the manners and customs of their then more civilized masters, the Spaniards. Their interview was long and interesting. They narrated, what is a tradition with them, that the white man would come from the far east and release them from the bonds and shackles which the Spaniards had imposed, not in the name, but in a worse form than slavery.

They and the numerous half-breeds are our fast friends now and forever. Three hundred years of oppression and injustice have failed to extinguish in this race the recollection that they were once the peaceable and inoffensive masters of the country.

A message was received the same night from Armijo, asking on what terms he would be received; but this proved to be only a ruse on his part to gain time in his flight to the south. Accounts go to show that his force at the Cañon was 4,000 men, tolerably armed, and six pieces of artillery. Had he been possessed of the slightest qualifications for a general, he might have given us infinite trouble. A priest arrived last night, the 29th, and brought the intelligence that at the moment of Armijo's flight, Ugarté, a colonel in the regular service, was on his march, at this side of the Passo del Norte, with 500 men to support him. That, had he continued, he would have been enabled to rouse the whole southern district, which is by far the wealthiest and most populous of the whole country.

In the course of the week, various deputations have come in from Taos,[21] giving in their allegiance and asking protection from the Indians. That portion of the country seems the best disposed towards the United States. A Taos man may be distinguished at once by the cordiality of his salutation.

A band of Navajoes,[22], naked, thin, and savage looking fellows, dropped in and took up their quarters with Mr. Robideaux, our interpreter, just opposite my quarters. They ate, drank, and slept all the time, noticing nothing but a little cinnamon-colored naked brat that was playing in the court, which they gazed at with the eyes of gastronomes.

a friend

Various rumors have reached us from the south that troops are moving on Santa Fé, and that the people are rising, &c. To quiet them, an expedition of 150 miles down the river has been determined on, to start on the 1st September.

August 30. This was on Sunday. To-day we went to church[23] in great state. The governor's seat, a large, well-stuffed chair, covered with crimson, was occupied by the commanding officer. The church was crowded with an attentive audience of men and women, but not a word was uttered from the pulpit by the priest, who kept his back to the congregation the whole time, repeating prayers and incantations. The band, the identical one used at the fandango, and strumming the same tunes, played without intermission. Except the governor's seat and one row of benches, there were no seats in the church. Each woman dropped on her knees on the bare floor as she entered, and only exchanged this position for a seat on the ground at long intervals, announced by the tinkle of a small bell.

The interior of the church was decorated with some fifty crosses, a great number of the most miserable paintings and wax figures, and looking glasses trimmed with pieces of tinsel.

The priest, a very grave, respectable looking person, of fair complexion, commenced the service by sprinkling holy water over the congregation; when abreast of any high official person he extended his silver water spout and gave him a handful.

When a favorite air was struck up, the young women, whom we recognised as having figured at the fandango, counted their beads, tossed their heads, and crossed themselves to the time of the music.

All appeared to have just left their work to come to church. There was no fine dressing nor personal display that will not be seen on week days. Indeed, on returning from church, we found all the stores open, and the market women selling their melons and plums as usual.

The fruits of this place, musk melon, apple, and plum, are very indifferent, and would scarcely be eaten in the States. I must except, in condemning their fruit, the apricot and grapes, which grow in perfection. On leaving the narrow valley of the Santa Fé, which varies from a thousand feet to a mile or two in width, the country presents nothing but barren hills, utterly incapable, both from soil and climate, of producing anything useful.

The valley is entirely cultivated by irrigation, and is now, as will be seen on the sketch, covered with corn. Five miles below the town, the stream disappears in the granitic sands.

The population of Santa Fé is from two to four thousand, and the inhabitants are, it is said, the poorest people of any town in the province. The houses are of mud bricks,[24] in the Spanish style, generally of one story, and built on a square. The interior of the square is an open court, and the principal rooms open into it. They are forbidding in appearance from the outside, but nothing can exceed the comfort and convenience of the interior. The thick walls make them cool in summer and warm in winter.

The better class of people are provided with excellent beds, but the lower class sleep on untanned skins. The women here, as in many other parts of the world, appear to be much before the men in refinement, intelligence, and knowledge of the useful arts. The higher class dress like the American women, except, instead of the bonnet, they wear a scarf over the head, called reboso. This they wear, asleep or awake, in the house or abroad.

The dress of the lower class of women is a simple petticoat, with arms and shoulders bare, except what may chance to be covered by the reboso.

The men who have means to do so, dress after our fashion; but by far the greater number, when they dress at all, wear leather breeches, tight round the hips and open from the knee down; shirt and blanket take the place of our coat and vest.

The city is dependent on the distant hills for wood, and at all hours of the day may be seen jackasses passing laden with wood, which is sold at two bits (twenty-five cents) the load. These are the most diminutive animals, and usually mounted from behind, after the fashion of leap-frog. The jackass is the only animal that can be subsisted in this barren neighborhood without great expense; our horses are all sent to a distance of twelve, fifteen, and thirty miles for grass.

Grain was very high when we first entered the town, selling freely at five and six dollars the fanega, (one hundred and forty pounds.) As our wagons draw near, and the crops of wheat are being gathered, the price is falling gradually to four dollars the fanega.

Milk at six cents per pint, eggs three cents a piece, sugar thirty-five cents per pound, and coffee seventy-five cents. The sugar used in the country is principally made from the cornstalk.

Price

A great reduction must take place now in the price of dry goods and groceries, twenty per cent, at least, for this was about the rate of duty charged by Armijo, which is now, of course, taken off.

He collected fifty or sixty thousand dollars annually, principally, indeed entirely, on goods imported overland from the United States. His charge was $500 the wagon load, without regard to the contents of the wagon or value of the goods, and hence the duty was very unjust and unequal.

Mr. Alvarez informed me that the importations from the United States varied very much, but that he thought they would average about half a million of dollars yearly, and no more. Most of the wagons go on to Chihuahua without breaking their loads.

New Mexico contains, according to the last census, made a few years since, 100,000 inhabitants. It is divided into three departments—the northern, middle, and southeastern.[25] These are again sub-divided into counties, and the counties into townships. The lower or southern division is incomparably the richest, containing 48,000 inhabitants, many of whom are wealthy and in possession of farms, stock, and gold dust.

N.M. statistics

New Mexico, although its soil is barren, and its resources limited, unless the gold mines should, as is probable, be more extensively developed hereafter, and the culture of the grape enlarged, is, from its position, in a commercial and military aspect, an all-important military possession for the United States. The road from Santa Fé to Fort Leavenworth presents few obstacles for a railway, and, if it continues as good to the Pacific, will be one of the routes to be considered, over which the United States will pass immense quantities of merchandise into what may become, in time, the rich and populous States of Sonora, Durango, and Southern California.

As a military position, it is important and necessary. The mountain fastnesses have long been the retreating places of the warlike parties of Indians and robbers, who sally out to intercept our caravans[26] moving over the different lines of travel to the Pacific.

The latitude of Santa Fé, determined by 52 circum-meridian altitudes of alpha aquilæ, 23 of beta aquarii, and 36 altitudes of polaris out of the meridian, is N. 35° 44′ 06″. The longitude, by the measurement of 8 distances between Alpha Aquilæ and the moon, and 8 between Antares and the moon, is respectively 7*h*. 04*m*. 14*s*. 7 and 7*h*. 04*m*. 22*s*. 4. The mean of which is 7*h*. 04*m*. 18*s*. and the longitude brought by the chronometer from the meridian of Fort Leavenworth is 7*h*. 04*m*. 05*s*. 5—(See Appendix No. 4.)

The place of observation was the court near the northeast corner of the public square. The latitude may be considered fixed; but satisfactory as the longitude may appear, I should, nevertheless, have greatly multiplied the number of lunar distances, had I not been in daily expectation of receiving a transit instrument, with which a set of observations on moon culminating stars could have been made at this important geographical point.

The mean of all the barometric readings at Santa Fé indicates, as the height of this point above the sea, 6,846 feet, and the neighboring peaks to the north are many thousand feet higher.

August 31. Lieutenant Warner arrived to-day, but cannot yet be relieved from ordnance duty. To-morrow an expedition goes to Taos, but, as Mr. Peck is sick, I have no officer to send with it. To-day apparently well authenticated accounts have arrived that Armijo met Ugarté, about 150 miles below, coming up with a force of 500 regulars and some pieces of artillery; that he turned back, and is now marching towards us with a large force, rallying the people as he passes, and that numbers are joining him from the upper towns. In consequence of these reports, the general has strengthened the force with which he is to march the day after to-morrow to meet him.

September 2. We marched out of Santa Fé at 9 o'clock, a. m., taking no one of my party except Mr. Bestor, and leaving Lieutenant Peck, who is still an invalid, to assist Lieutenant Gilmer. We descended the valley of the Santa Fé river nearly west, for five miles, when we left the river and struck across a dry arid plain intersected by arroyos, (dry beds of streams,) in a southwesterly course. Twenty-three miles brought us to the Galisteo creek, which, at that time, was barely running. The bed of the creek is sand and pebbles of the primitive rock, and lies between steep clay and limestone, traversed occasionally by trap dykes, which in one place are so regular as to resemble a wall pierced with windows. From this place to its mouth there is scarcely the sign of vegetation. At the dry mouth of the Galisteo, and directly on the Del Norte, is the town of Santo Domingo. Before reaching Galisteo creek, but after leaving Santa Fé some miles, a few sprigs of grama tempted us to halt and bait our nags; but the principal growth on the plains was Ephedra,[27] Diotis lanata, (Romeria of the Spaniards,) Hendecandra Texana.

September 3. This has been a great day. An invitation was received, some days since, from the Pueblo Indians to visit their town of Santo Domingo. From height to height, as we advanced, we saw horsemen disappearing at full speed. As we arrived abreast of the town we were shown by a guide, posted there for the purpose, the road to Santo Domingo. The chief part of the command and the wagon train were sent along the highway; the general with his staff and Captain Burgwyn's squadron of dragoons, wended his way along the bridle path nearly due west to the town. We had not proceeded far, before we met ten or fifteen sachemic looking old Indians, well mounted, and two of them carrying gold-headed canes with tassels, the emblems of office in New Mexico.

Salutations over, we jogged along, and, in the course of conversation, the alcalde, a grave and majestic old Indian, said, as if casually, "We shall meet some Indians presently, mounted, and dressed for war, but they are the young men of my town, friends come to receive you, and I wish you to caution your men not to fire upon them when they ride towards them."

When within a few miles of the town, we saw a cloud of dust rapidly advancing, and soon the air was rent with a terrible yell, resembling the Florida war-whoop. The first object that caught my eye through the column of dust, was a fierce pair of buffalo horns, overlapped with long shaggy hair. As they approached, the sturdy form of a naked Indian revealed itself beneath the horns, with shield and lance, dashing at full speed, on a white horse, which, like his own body, was painted all the colors of the rainbow; and then, one by one, his followers came on, painted to the eyes, their own heads and their horses covered with all the strange equipments that the brute creation could afford in the way of horns, skulls, tails, feathers, and claws.

As they passed us, one rank on each side, they fired a volley under our horses' bellies from the right and from the left. Our well-trained dragoons sat motionless on their horses, which went along without pricking an ear or showing any sign of excitement.

Arrived in the rear, the Indians circled round, dropped into a walk on our flanks until their horses recovered breath, when off they went at full speed, passing to our front, and when there, the opposite files met, and each man selected his adversary and kept up a running fight, with muskets, lances, and bows and arrows. Sometimes a fellow would stoop almost to the earth to shoot under his horse's belly, at full speed, or to shield himself from an impending blow. So they continued to pass and repass us all the way to the steep cliff which overhangs the town. There they filed on each side of the road, which descends through a deep cañon, and halted on the peaks of the cliffs. Their motionless forms projected against the clear blue sky above, formed studies for an artist. In the cañon we were joined by the priest, a fat old white gentleman. We were escorted first to the padre's, of course; for here, as everywhere, these men are the most intelligent, and the best to do in the world, and when the good people wish to put their best foot foremost, the padre's wines, beds, and couches have to suffer. The entrance to the portal was lined with the women of the village, all dressed alike, and ranged in treble files; they looked fat and stupid.

We were shown into his reverence's parlor, tapestried with curtains stamped with the likenesses of all the Presidents of the United States up to this time. The cushions were of spotless damask, and the couch covered with a white Navajoe blanket worked in richly colored flowers.

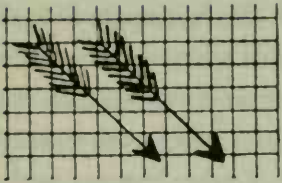
The air was redolent with the perfumes of grapes and melons, and every crack of door and windows glistened with the bright eyes and arms of the women of the capilla.[28] The old priest was busily talking in the corner, and little did he know of the game of sighs and signs carried on between the young fellows and the fair inmates of his house. We had our gayest array of young men out to-day, and the women seemed to me to drop their usual subdued look and timid wave of the eyelash for good hearty twinkles and signs of unaffected and cordial welcome—signs supplying the place of conversation, as neither party could speak the language of the other. This little exchange of the artillery of eyes was amusing enough, but I was very glad to see the padre move towards the table, and remove the pure white napkins from the grapes, melons, and wine. We were as thirsty as dust and heat could make us, and we relished the wine highly, whatever its quality. The sponge cake was irreproachable, and would have done honor to our best northern housekeepers. Indeed, wherever we have been feasted, the sponge cake has been in profusion, and of the best kind. After the repast, the general went forward on the portal and delivered a speech to the assembled people of the town, which was first interpreted into Spanish, and then into Pueblo.

It is impossible to arrive at the precise population of the town but I should judge it to be about six hundred, and the quantity of ground under tillage for their support about five hundred acres.

The valley of the Del Norte is here quite narrow, and the soil sandy. The river itself was viewed by me, for the first time, with a strange interest. The hardships, trials, and perseverance of the gallant Pike, and the adventures of the pious and brave soldiers of the cross, Rivèra[29] and La Ford, came forcibly to my mind; as I kneeled down to drink of its waters my thoughts were of them. Leaving Santo Domingo, we struck the highway in about four miles, and two more brought us to the pretty village of San Felippe, overhung by a steep craggy precipice, upon the summit of which are the ruins of a Roman Catholic church, presenting in the landscape sketch the appearance of the pictures we see of the castles on the Rhine.

Between San Felippe and the Angosturas, six miles below, the valley of the river is very narrow, affording no interval for agriculture. On the west side, the banks are steep walls, crowned by seams of basalt forming the table lands. The east is composed of rolling sand hills, rising gradually to the base of the mountains, and covered with large round pebbles. I must except from this the poverty-stricken little town of Algodones, which has some ground round it in cultivation.

The observations for the determination of this camp, about one mile below the town of San Felippe, were made on my return, (September 10th,) and will be found under that date in Appendix No. 5. The height indicated by the barometer of this, the first camp on the Rio del Norte, is 5,000 feet above the level of the sea.



Bernalillo...Fandango at Tome'...Middle Reaches of the Rio Grande..."Navajoe" Raiders...Kit Carson Arrives...Red Sleeve, the Apache.

September 4. Below the Angosturas, the valley of the river opens into a plain, varying from two to six miles in width, generally sufficiently low and level to admit the water of the river to be carried over it for the purposes of irrigation; but the soil is very sandy and better adapted to Indian corn than wheat. Of this last we saw but few stubbles, the ground being chiefly planted with corn. The vegetation is much the same as that described after leaving Santa Fé, with the addition of quite a number of compositæ.

News now began to arrive which left but little doubt that the reports which caused our movement down the river were exaggerated, if not wholly without foundation. People had passed down the river, as was reported, but in no great numbers. A messenger came in from the alcalde of Tomé with an official note, stating that Armijo had left with him one hundred mules, pressed into service to meet us at the cañon, and that Armijo had also notified him that one hundred more would be left at the Paso del Norte. These belonged to citizens of New Mexico, and had been taken from them without their consent. It was his practice, in peace or in war, to seize the person or property of any who fell under his displeasure.

The town of Bernalillo is small, but one of the best built in the territory. We were here invited to the house of a wealthy man, to take some refreshment. We were led into an oblong room, furnished like that of every Mexican in comfortable circumstances. A banquette runs around the room, leaving only a space for the couch. It is covered with cushions, carpets, and pillows; upon which the visitor sits or reclines. The dirt floor is usually covered a third or a half with common looking carpet. On the uncovered part is the table, freighted with grapes, sponge-cake, and the wine of the country. The walls are hung with miserable pictures of the saints, crosses innumerable, and Yankee mirrors without number. These last are suspended entirely out of reach; and if one wishes to shave or adjust his toilet, he must do so without the aid of a mirror, be there ever so many in the chamber.

We passed on to the house of our host's wealthy son, where we were invited to dine. Here we found another refreshment table; and, after waiting some hours, dinner was announced. It was a queer jumble of refinement and barbarism; the first predominating in everything, except in the mode of serving, which was chiefly performed by the master, his Mexican guests, and a few female serfs.

The plates, forks, and spoons were of solid New Mexican silver, clumsily worked in the country. The middle of the table was strewed with the finest white bread, cut in pieces and within the reach of every cover. At close intervals were glass decanters, of Pittsburg[30] manufacture, filled with wine made on the plantation. The dishes were served separately. The first was soup maigre; then followed roast chicken, stuffed with onions; then mutton, boiled with onions; then followed various other dishes, all dressed with the everlasting onion; and the whole terminated by chilé, the glory of New Mexico, and the frijolé.

Chilé the Mexicans consider the chef-d'œuvre of the cuisine, and seem really to revel in it; but the first mouthful brought the tears trickling down my cheeks, very much to the amusement of the spectators with their leather-lined throats. It was red pepper, stuffed with minced meat.

From Bernalillo the valley opens, but narrows again at Zandia, an Indian town on a sand-bank at the base of a high mountain of the same name, said to contain the precious metals.

They were treading wheat here, which is done by making a circular "corral" on a level ground of clay; upon this floor they scatter the wheat, turn in a dozen or more mules, and one or two Indians, who, with whoops, yells, and blows, keep the affrighted brutes constantly in motion. To separate the wheat from the chaff, both Indians and Mexicans use a simple hand-barrow, with a bottom of raw bull's hide perforated with holes. I should suppose it must take an hour to winnow a bushel.

After dining sumptuously at Sandival's we went to our camp in the Alameda. Here the valley is wide and well cultivated. The people of the surrounding country flocked in with grapes, melons, and eggs. Swarms of wild geese and sand cranes passed over camp. They frequent the river and are undisturbed save when some American levels his rifle.

By observation, the latitude of this camp is 35° 11′ 50″, and the longitude 106° 45′ 00″ west of Greenwich.

* * *

No entry for September 5.—Ed.

* * *

September 6. We encamped last night on very indifferent grass. Breakfasted with Don José Chavez, at Perdilla. When sitting our chins just reached the table. There were five or six courses, ending with coffee. Before breakfast, we were summoned to mass in Don José's private chapel, where the eccentric person we met at yesterday's dinner officiated. Priest,[31] fop, courtier, and poet were curiously combined in one person. Proud of his pure white hand, he flourished it incessantly, sometimes running his fingers through his hair in imitation of some pretty coquette, and ever and anon glancing in one of the many looking-glasses with which the church was decorated. After mass, to our surprise, he delivered an eloquent discourse, eulogising the grandeur, magnanimity, power, and justice of the United States.

priest suppor

Attending mass before breakfast proved anything but an appetizer. The church was crowded with women of all conditions, and the horrid reboso, which the poor use for shawls, bonnets, handkerchief, and spit box, sent out an odor which the incense from the altar failed to stifle.

One fact struck me as singular in all the houses that we visited, the ladies never made their appearance; and it was always by the merest accident that we caught a glimpse of one of the family.

At Isoletta, I became tired of the show, and, seeing my servant talking at the door of one of his acquaintances, I took the liberty of asking permission to take a quiet siesta; but this was out of the question. The good woman overwhelmed me with a thousand questions about the United States, which could only be stopped by questioning her in return. She denounced Armijo; said, with a true Castilian flash of the eye, "I do not see how any man wearing those things," pointing to my shoulder straps, "could run away as he did. He had a good army to back him, and could have driven you all back."

to
bribery

The valley suddenly contracts below Perdilla, between Isoletta and Peralta. On the east side of the river there is deep sand, and the country is perfectly barren.

I observed to-night, for time and latitude at my camp, about 500 feet northwest of Senora Chavez private chapel; thirteen altitudes of Polaris give for the latitude of this place, 34° 50′ 57″; and twelve of Corona Borealis, and nine of Alpha Pegasi, give the chronometric longitude 7*h*. 07*m*. 8*s*.4.

September 7. The early part of last evening was most beautifully bright and serene; the air was of the most delightful temperature, varied occasionally by a gentle breeze from the south, wafting along the perfume of the vineyards. I made some observations for time and latitude; the last unsatisfactorily, owing to the brightness of the moon dimming the southern stars. About 11 o'clock, the whole character of the night was changed by an east wind that came rustling down from the mountains, driving the sand before it. Nearly the whole distance travelled in the last three days has been over drifting sand, with only occasional patches of firm soil.

After rising early to attend to some business, I walked over the town of Peralta, which is interspersed with cotton-wood, growing in nearly the regular order of an apple orchard. I then repaired to head-quarters, at the palace of Mr. Ortega, a spacious one story edifice, five hundred feet front.

We marched and encamped near Tomé. It was the eve of the fête of Tomé in honor of the Virgin Mary, and people from all parts of the country were flocking in crowds to the town. The primitive wagons of the country were used by the women as coaches. These wagons were heavy boxes mounted on wheels cut from large cotton-wood; over the top of the box was spread a blanket, and inside were huddled, in a dense crowd, the women, children, pigs, lambs, and "everything that is his." The man of the family usually seated himself on the tongue of the wagon, his time divided between belabouring his beasts and scratching his head. In one of these wagons a violin was being played, and the women who were sitting on their feet, made the most of the music by brandishing their bare arms and moving their heads to the cadence. At night there was a theatrical representation in the public square. The piece dramatized was from the Old Testament.

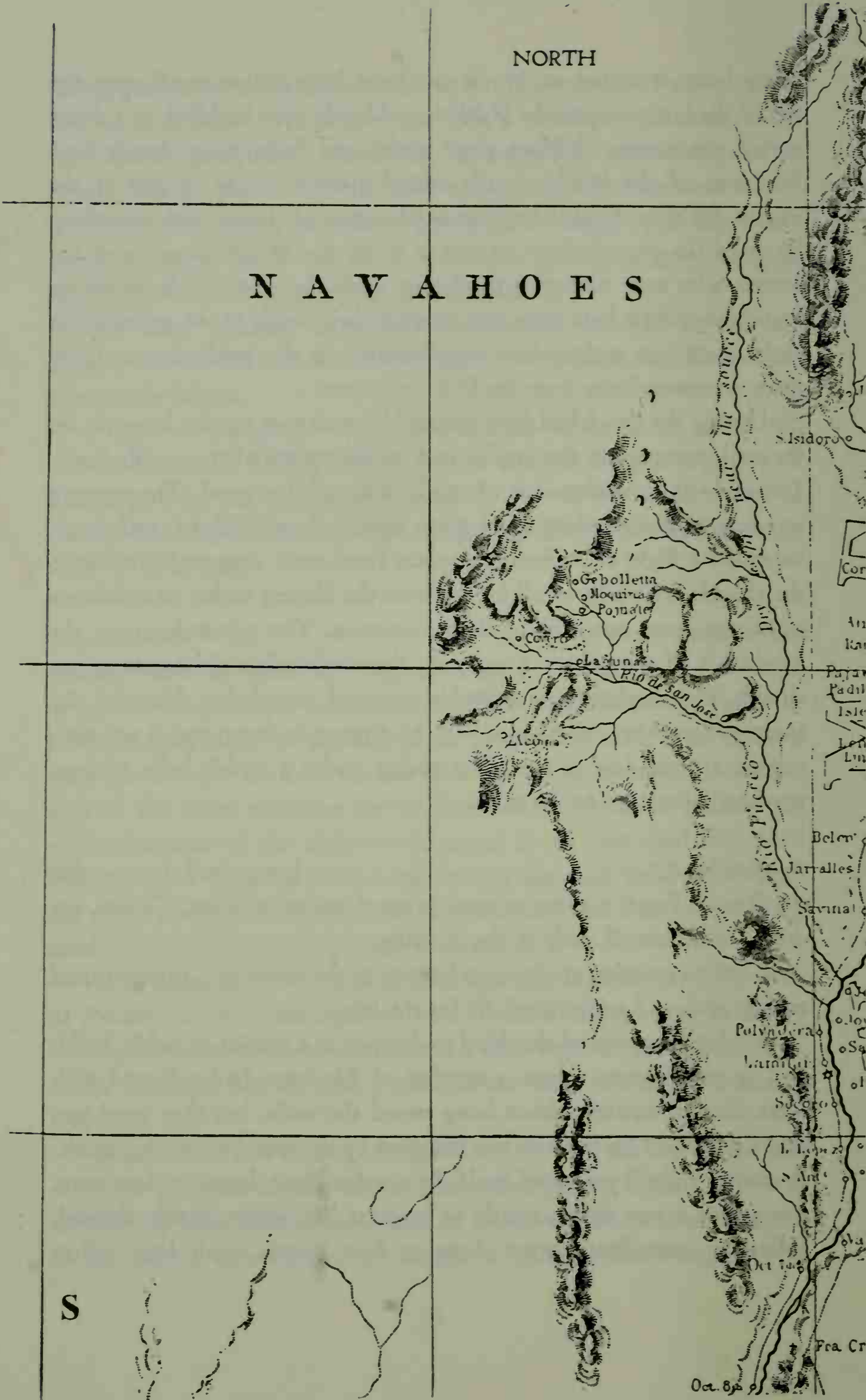
During the day I had been puzzled by seeing at regular intervals on the wall surrounding the capilla, and on the turrets of the capilla itself, (which be it remembered is of mud,) piles of dry wood. The mystery was now to be cleared up. At a given signal all were lighted, and simultaneously a flight of rockets took place from every door and window of the chapel, fire-works of all kinds, from the blazing rocket to children's whirligigs, were now displayed in succession. The pyrotechny was the handicraft of the priests. I must say the whole affair did honor to the church, and displayed considerable chemical knowledge. Most of the spectators were on mules, each with his woman in front, and it was considered a great feat to explode a rocket under a mule's belly without previous intimation to the rider.

fireworks

September 8. Long shall I remember the fête of Tomé, a scene at once so novel and so striking. To-day, my duties called me off early in the morning.

I had to examine guides in reference to the route to California, and engage such as I might think fit for the trip.

My last interview of this kind to-day was in a species of public building, or guard-house, where a number of Mexicans had collected with arms. Several written tablets hung round the walls, but they were perfectly illegible. Our business was cut short by the sound of passing music. A strange sight[32] presented itself. In a sedan chair, borne by four men, was seated a wax figure, nearly as large as life, extravagantly dressed; following immediately were three or four priests, with long tallow


NORTH
NAVAHOES
near the source
Dry
S. Isidoro
Cor
Geboletta
Moquino
Pojuate
Covero
Laguna
Rio de San José
Acoma
Rio Puerco
Padil
Isle
Belen
Jarralles
Savinal
Polvadera
Lamitar
Socorro
L. Lopez
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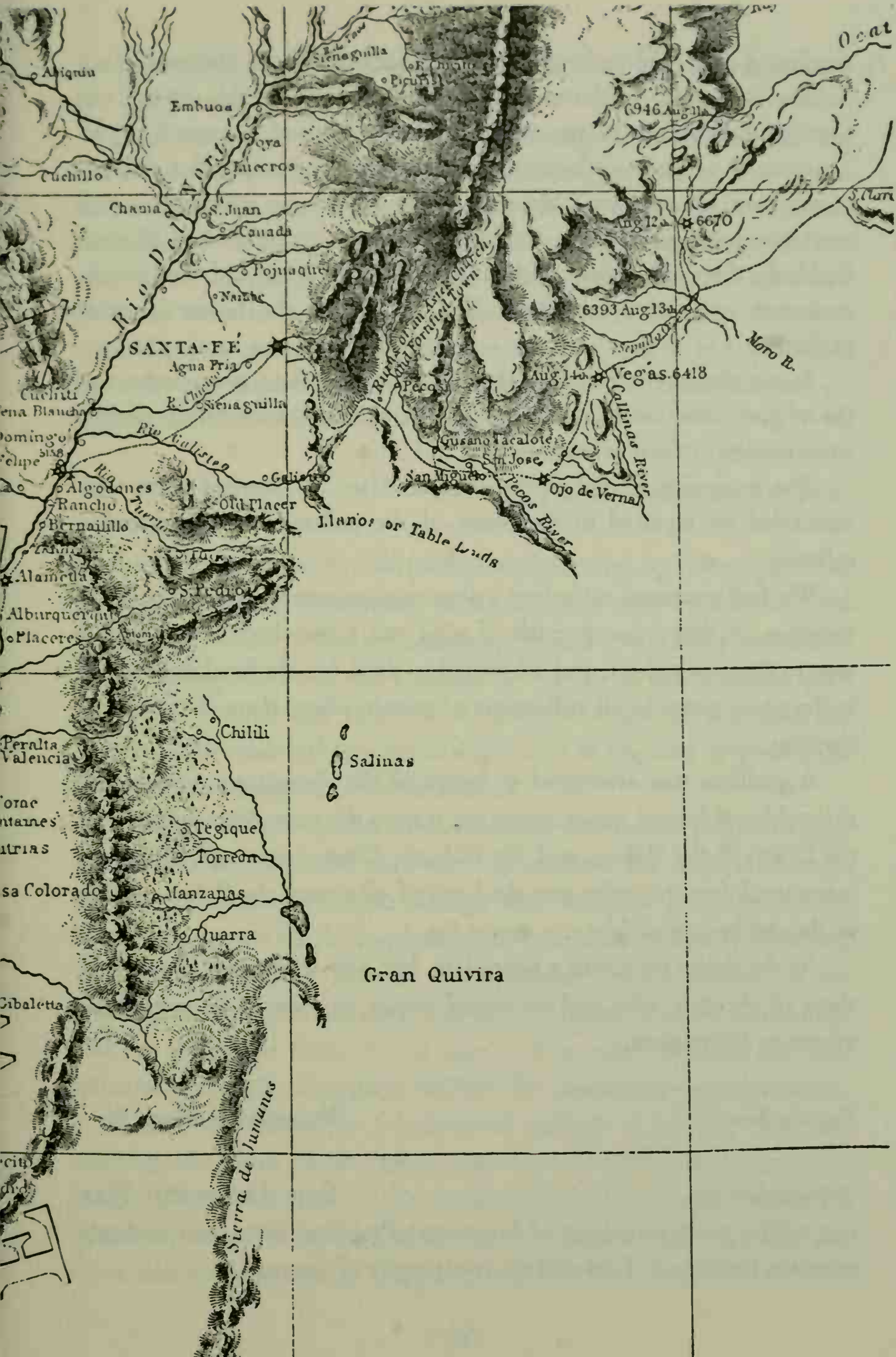

Abiquiu
Embuoa
Siena guilla
Picuris
Joya
Truecros
Cuchillo
Chama
S. Juan
Canada
Pojuaque
Nambe
Rio Del Norte
SANTA-FE
Agua Fria
R. Chama
Siena guilla
Ruins of an Aztec Church and fortified Town
Pecos
Cuchiti
Pena Blanca
Domingo
Felipe
5158
Rio Galisteo
Galisteo
Algodones
Rancho
Bernalillo
Rio Puerco
Old Placer
Llanos or Table Lands
Alameda
S. Pedro
Alburquerque
Placeres
6946 Aug 11
Aug 12
6670
6393 Aug 13
Moro R.
Aug. 14
Vegas 6418
Gallinas River
Gusano
Tacalote
San Jose
San Miguel
Pecos River
Ojo de Vernal
Chilili
Salinas
Peralta
Valencia
Tome
Tegique
Torreon
Manzanas
Quarra
Gran Quivira
Cibaletta
Sierra de Jumanes

August 10th to October 8th.

candles, a full yard in length. Some American officers followed, each holding a candle. Unfortunately I emerged just as this group was passing; there was no escape, and the moment I joined, a grave Mexican (apparently a man in authority) thrust a candle into my hand. I thought of my coat, my only coat, the coat which was on my back, and which must take me to California, and back again into the interior of Mexico! Suddenly there was a halt without any word of command, and in the confusion we jostled each other and distributed the tallow in great profusion.

It was thought proper that the officers should show every respect to the religious observances of the country, consequently they did not decline participation in these ceremonies.

The procession ended at the church. After the services there were concluded we repaired to the house of the padre, where we found a collation.

We had proposed attending a theatrical representation going on in the open air, but a heavy squall of wind and a few drops of rain put a stop to this amusement, and all retired to dress for the fandango, which is the name given to all collections of people where there is music and dancing.

A cotillion was attempted in honor of the Americans present, but this cold and formal dance soon gave way to the more joyous dances of the Coona,[33] the Bolero, and the Italiana. Every variety of figure was introduced, but the waltz was the basis of all except the Bolero, which, as danced here resembles our negro jig.

At the dance we found a very plain, but very intelligent woman, the sister of Armijo, who said he would return as soon as he settled his affairs in Chihuahua.

September 11. Returned to Santa Fé.

September 15. Sent Lieutenant Warner, with a party consisting of Lieutenant Peck and three men to determine the latitude of Taos and the topography of the road.

From the 15th to 25th September I was busily engaged in fitting out for California.

Lieutenant Abert, who was left dangerously ill at Bent's Fort, had not arrived on the 25th, but accounts reached me that he was convalescent, and on his way to Santa Fé, where he might shortly be expected. Lieutenant Peck was also an invalid, and neither being able to accompany us to California, I left, by the general's direction, the subjoined order for them to make a map of New Mexico, based upon the astronomical points and measurements determined by myself, and to furnish from the best statistical sources, an account of the population and resources, military and civil, of the province.

mapping of N.M.

Santa Fé, *September* 14, 1846.

Sir: I am charged by the general commanding to inform you that you will remain for the present in the territory of New Mexico, and should your health, or that of Lieutenant Peck, be sufficiently restored to return to duty, that you will continue the survey of this territory, commenced by myself, and follow it to completion, provided it does not interfere with other military duties which may be required of you by the officer left in command of the territory.

With the limited number of instruments that can be placed in your hands, it is not expected that you will conduct the survey on strict geodetic principles, yet it is believed that sufficient precision can be attained to answer all the requirements of the military and civil service.

The country from Taos to Fra Cristobal contains nearly all the ground that is under cultivation, and nearly all that is worth cultivating; and for this whole distance it is open and bounded by high and conspicuous peaks, affording great facilities for conducting your operations.

I have established the astronomical position of six points in this territory, viz: camp 42, at Vegas; camp 43, Vernal[34] springs, Santa Fé; camp 55, 1¼ miles south of the church of San Felippe; camp 49, at the Alameda; camp 51, at Peralta, at the mill, and I shall establish two more, one at Taos, and the other at Socoro.

These points are quite sufficient, and will be the base of your operations; and upon them you will form a trigonometric *canevas*. For this purpose the rule requiring every angle of the series to be greater than 30°, may be wholly disregarded. And after having determined by triangulation the position of any three conspicuous peaks, the position of any other points, which are in view of the three first named, may be determined by the problem of three points, as is practised in hydrographic surveys. Many such points will present themselves.

The *canevas*? completed, the course of the Del Norte, that of its tributaries to the base of the mountains or beyond the settlements; the width of the valleys; the quantity of land under cultivation; the position of the towns, churches, hills, and all other topographical features of the country, can be determined with the Schmalkalder compasses.

If your force is sufficient, the operation described in this last paragraph may be carried on simultaneously with the triangulation. You are aware that I have no theodolite at my disposal; the triangulation must, therefore, be made with the sextant.

The population, number of cattle, horses, and sheep, and the quantity of grain and other agricultural products, the facilities and best localities for water power to propel machinery, and also the mineral resources of the country, it is very desirable to know. You will, therefore, give particular attention to acquiring all the information on these subjects which the present statistical knowledge in the country will afford.

A requisition for five thousand dollars will be made on the Bureau of Topographical Engineers, for the survey, to be placed to your credit with Mr. Robert Campbell of St. Louis, upon whom, I should think, you might safely draw without waiting to hear from Washington.

I made a requisition on the bureau, dated June 18, 1846, for a transit instrument, and also for an instrument to obtain the magnetic dip and declination. Should these arrive, you will unpack them, mount the instruments near the place where I observed in Santa Fé, and commence a series of observations for longitude by moon culminating stars, and for the magnetic dip and declination.

The series for longitude will be continued for at least three lunations, and, should an opportunity present itself, I wish the observations and results to be communicated to me in California.

I am, very respectfully, your obedient servant.

W. H. EMORY,
First Lieut. Corps Top. Engineers.

Lieutenant J. W. ABERT, or in his absence,
Lieutenant W. G. PECK.

General orders were issued designating the force to march on California. It consisted of three hundred United States 1st dragoons, under Major Sumner, who were to be followed by the battalion of Mormons, five hundred in number, commanded by Captain Cooke.

Colonel Doniphan's regiment was to remain in New Mexico until relieved by Colonel Price's regiment, which was daily expected to reach there from the United States, when Colonel Doniphan's regiment was directed to effect a junction with General Wool at Chihuahua.

division of the Army

Major Clarke's two batteries of artillery were divided—one company, Captain Fisher's, to be left in New Mexico; the other, Captain Weightman's, to accompany Colonel Doniphan. The battalion of foot, under Captain Agney, was directed to remain in Santa Fé.

Thus was the army of the west divided into three columns, to operate in regions remote from each other, and never to unite again in one body.

September 25. I received notice that the general was to march at 2, p. m., for California. His force consisted of three hundred dragoons, to be followed by a battalion of Mormons on foot that had not yet arrived in Santa Fé.

My requisition for twelve pack-saddles and eight mules not being filled, I determined to delay starting for an hour or two, and did not reach my camp, sixteen miles distant, till long after dark. I found my tent pitched, my supper smoking, and corn secured for my mules; this was gratifying, and I congratulated myself on the reorganization of my party, at least so far as the *personnel* was concerned, for I had never found my camp so well attended to.

The day was excessively hot, the night very cold, the thermometer 32 degrees.

Memorandum.—My party is now organized as follows:

Lieutenant Warner, topographical engineers, &c.
J. M. Stanly, draughtsman.
Norman Bestor, assistant.

Men.

James Early, driver to instrument wagon;
W. H. Peterson, in charge of horizon box and cantina for sextants;
Baptiste Perrot, driver of transportation wagon;
Maurice Longdeau, in charge of spare mules;
François de Von Cœur, in charge of spare mules;
Frank Ménard, assistant teamster;
James Riley, assistant to Bestor;
Dabney Eustis, assistant to Stanly,
and the private servants of Lieutenant Warner and myself.

Our road is over the ground heretofore travelled and chronicled as far as Tomé.

As an evidence of the ignorance of the people here respecting the topography of the country, and also the ignorance of foreigners who have lived fifteen or twenty years in Santa Fé, no one could tell me where the Rio Santa Fé debouched into the Rio Grande.

I may here remark, that every night I furnished the distances travelled over to General Kearny at headquarters, and very often (whenever required) the latitude of the camp. In many cases these and the distances have been published; I shall, therefore, not repeat them. The latitudes in some cases have been incorrectly reported, and in others recomputed, and are therefore now given as final results.

September 26, 27, 28, 29, and 30. We marched over the same ground already travelled over and described, between the 2nd and 7th of September.

Below Zandia we were attracted by a great noise. It proceeded from a neighboring rancheria, where we saw eight or ten naked fellows hammering away in a trough full of cornstalks, as I had never seen Mexicans exert themselves before. The perspiration from their bodies was rolling off into the trough in profusion, and mingling with the crushed cane. This was taken out, boiled, and transferred to a press, as primitive in construction as anything from the hands of Father Abraham.

The hopper was the trunk of a scooped cotton-wood tree, into this was inserted a billet of wood, upon which the lever rested about midway. Men, women, and children were mounted on each end; all see-sawing in the highest glee. I suggested, as an improvement, that one end of the lever be confined, and the whole of the living weight be transferred to the other end. "No! No!" said the head man, "if I do that, the fun of see-sawing will be over, and I can't get any body to work." The man was a disciple of Charles Fourier, and desired "to make labor attractive."

The morning of the 29th opened with a grand trade in mules and horses. A few days' experience was quite enough to warn us that our outfit would not answer, and the general directed that all the poor mules and horses should be exchanged for fat ones. The scene reminded one more of a horse market than a regular camp. The more liberal were our offers for the animals, the more exorbitant became the demands of the Mexicans.

horse trading

At Albuquerque I was directed to call and see Madame Armijo, and ask her for the map[35] of New Mexico, belonging to her husband, which she had in her possesison. I found her ladyship sitting on an ottoman smoking, after the fashion of her country-women, within reach of a small silver vase filled with coal. She said she had searched for the map without success; if not in Santa Fé, her husband must have taken it with him to Chihuahua.

strangely friendly
behavior from
enemies

We crossed the Rio Grande del Norte at Albuquerque, its width was about twenty-five yards, and its deepest part just up to the hubs of the wheels. It is low at present, but at no time, we learned, is its rise excessive—scarcely exceeding one or two feet.

stream
change

We encamped a little more than half way between Albuquerque and Pardillas, on a sandy plain, destitute of wood, and with little grass.

We saw myriads of sand crane, geese, and brant.

September 30. Feeling no desire to go over the same ground twice, I struck off on the table lands to the west, and found them a succession of rolling sand hills, with Obione canescens,[36] Franseria acanthocarpa, yerba del sapa of the Mexicans, and occasionally, at very long intervals with scrub cedar, about as high as the boot-top.

praids
xicans

I saw here the hiding places of the Navajoes, who, when few in numbers, wait for the night to descend upon the valley and carry off the fruit, sheep, women, and children of the Mexicans. When in numbers, they come in day-time and levy their dues. Their retreats and caverns are at a distance to the west, in high and inaccessible mountains, where troops of the United States will find great difficulty in overtaking and subduing them, but where the Mexicans have never thought of penetrating. The Navajoes may be termed the lords of New Mexico. Few in number, disdaining the cultivation of the soil, and even the rearing of cattle, they draw all their supplies from the valley of the Del Norte.

As we marched down the river to meet Ugarté and Armijo, the Navajoes attacked the settlements three miles in our rear, killed one man, crippled another, and carried off a large supply of sheep and cattle. To-day we have a report, which appears well authenticated, that the Mexicans taking courage at the expectations of protection from the United States, had the temerity to resist a levy, and the consequence was, the loss of six men killed and two wounded.

They are prudent in their depredations, never taking so much from one man as to ruin him. Armijo never permitted the inhabitants to war upon these thieves. The power he had of letting these people loose on the New Mexicans was the great secret of his arbitrary sway over a people who hated and despised him. Any offender against Armijo was pretty sure to have a visit from the Navajoes.

n
piracy
Navajo?

I stopped at the little town of Isoletta, to visit my friend, the alcalde, who has the reputation, Indian though he be, of being the most honest man and best maker of brandy in the territory. Mr. Stanly accompanied me, for the purpose of sketching one of the women as a specimen of the race. I told the alcalde our object, and soon a very beautiful woman made her appearance, perfectly conscious of the purpose for which her presence was desired. Her first position was exquisitely graceful, but the light did not suit, and when Stanley changed her position, the charm of her attitude was gone.

We came down from the table lands through a ravine, where the lava, in a seam of about six feet, overlaid soft sand-stone. At the point of junction, the sand was but slightly colored. The lava was cellular, and the holes so large that the hawks were building nests in them.

At this ravine the Navajoes descended when they made their last attack; at the same moment the volunteers were ascending the other slope of the hill, on their way to garrison Cibolletta.

The camp of this date (September 30) is near the camp of September 6; and my observations this evening verified, in a very satisfactory manner, the travelling rate assumed for the chronometer 783. The longitude of camp of September 7, given by chronometer, is 7*h*. 07*m*. 00*s*.; that of this present camp, which is one mile west of it, is 7*h*. 07*m*. 08*s*. Here, in addition to my usual observations for time and latitude, I took a set of lunar distances, with east and west stars.—(See Appendix.)

Above this camp, there is on the river a considerable growth of cotton-wood; among which are found some "signs" of beaver. The plains and river bottoms were covered with much the same growth as that heretofore noted; to which may be added an Erythera,[37] a handsome little gentian-like plant, with deep rose-colored flowers, and a Solanum, a kind of wild potato, with narrow leaves, which Dr. Torrey says is different from any in the United States.

October 1. To-day, for the first time for six days, I was able to rise from my bed without assistance. The air was elastic, and fragrant with the perfumes of the wild sage from the adjacent hills. Everything was, in truth, couleur de rose; for the sun beamed out bright and red, infusing the same tint over the landscape, till near meridian. I crossed to Tomé, in search of some non-complying guides. We recrossed at Tomé, and measured the section of the river.

* * * * * * *

This section is about the same as at San Felippe and Santo Domingo. If to it we add the section of a stream of water carried off by two large zequias,[38] each nine feet by two, we shall have an estimate of the volume of water discharged by this famous river, for 150 miles, through the most populous and fertile part of its valley.

Below Tomé, for a few miles, the valley widens, the soil improves, and the cultivation is superior to any other part, particularly that of the rancherias around the pleasant little village of Belen.

October 2. This morning we passed the pretty church in the village of Sabinal, after which the settlements became very few and far between. We encamped opposite La Lloya, at the bend of the river Del Norte, where the low sand hills on either side seem to unite and shut up the valley.

We received a message from the major domo of the neighboring rancheria, cautioning us to be watchful of our animals, that forty of the Navajoes had passed the river last night. The incursions of these Indians have prevented the settlement and cultivation of this part of the country.

The sand bank, at the foot of which we are encamped, is filled with serpentine, harder than that which is dug in such quantities from the site of Fort Marcy, near Santa Fé.

Now and then we came to spots from which the waters were prevented from escaping by the sand, and had evaporated, leaving saline incrustations; about these we found growing abundantly Atriplex and Salicornia.[39]

October 3. The wagons from the rear not being up, we laid by all day, in hourly expectation of their arrival and an order to march. An express from Colonel Price came up, informing us of his arrival in Santa Fé.

About 12 o'clock in the day, a Mexican came into camp, with his horse foaming, to say that the Navajoes had made an attack on the town of Pulvidera. One company of dragoons were immediately despatched to the place, about twelve miles distant.

This camp was one of the prettiest of the whole march, on the curve of the river, fringed with large cotton-woods growing at intervals. The air was mild and balsamic, the moon shone brightly, and all was still as death, except when a flock of geese or sand-cranes were disturbed in their repose. Several large cat-fish and soft-shell turtle were caught, and we saw blue-winged ducks, plovers, doves, and a few meadow larks.

No fact proves the indolence and incapacity of the Mexican for sport or for war more glaringly, than that these immense flights of sand-cranes and geese are found quietly feeding within gunshot distance of their houses and largest towns. Going into Albuquerque, I started a hungry-looking wolf in a watermelon patch, close to the walls of the town.

low opinion of Mexicans

October 4. The wagons mounted the sand hills with great difficulty. The river impinges so close on the hills as to make it necessary, on the western side, to mount the table lands. These plains, reaching to the base of the mountains, are of the same character as heretofore mentioned, of rolling sand hills, covered with Obione canescens, Prosopis glandulosa, (romeria), Riddellia[40] tagetina, Paga-paga, and a few patches of grama. This last is the only nutriment the plains afford for horses and cattle; but mules and asses, when hard pressed, will eat the trato and romeria. The Chamisa grows to a considerable height, and the stalk is sometimes two or three inches in diameter; a fire can be made of it sufficient to boil a kettle or roast an egg. Today I ate, for the first time, the fruit of the prickly pear, the "yerba de la vivera," of the Mexicans; as I was thirsty, it tasted truly delicious, having the flavor of a lemon with crushed sugar.

Below La Joya two sand hill spurs, overlaid with fragments of lava and trap, project from the east and west, closing the valley, just leaving sufficient space for the river to pass between. The river winds below in a beautiful semicircle, bending to the west. On either side is excellent grass, apparently untouched, and shaded by large cotton-woods. To the west, the hills of Pulvidera form an amphitheatre. The whole picture, the loveliest I have seen in New Mexico, loses nothing by being projected, from where we stood, against the red walls of the Sierra Grande,[41] which extend from Zandia southward, dividing the waters of the Puerco,[42] on the east, from those of the Rio Grande.

I longed to cross these mountains and explore the haunts of the

Apaches, and the hiding places of the Camanches,[43] and look up a nearer route home by the way of the Red river, which the hunters and voyageurs all believe to exist. But onward for California was the word, and he who deviated from the trail of the army must expect a long journey for his jaded beast and several days' separation from his baggage. We were not on an exploring expedition; war was the object; yet we had now marched one thousand miles without fleshing a sabre.

TRUE

Arrived at the town of Pulvidera, which we found, as its name implies, covered with dust, we received full accounts of the attack made on the town by the Apaches the day before. The dragoons arrived too late to render assistance.

p raid

About one hundred Indians, well mounted, charged upon the town and drove off all the horses and cattle of the place. The terrified inhabitants fled to their mud houses, which they barricaded. The people of Lamitas,[44] a town two miles below, came to the rescue, and seized upon the pass between the Sierra Pulvidera and the Sierra Socoro. The Indians seeing their retreat with the cattle and goats cut off, fell to work like savages as they were, killing as many of these as they could, and scampered off over the mountains and cliffs with the horses and mules, which they could more easily secure.

This same band entered the settlements some miles above when we were marching on Santa Fé, and when Armijo had called all the men of the country to its defence. In this foray, besides horses, they carried off fifteen or sixteen of the prettiest women.

captives

Women, when captured, are taken as wives by those who capture them, but they are treated by the Indian wives of the capturers as slaves, and made to carry wood and water; if they chance to be pretty, or receive too much attention from their lords and masters, they are, in the absence of the latter, unmercifully beaten and otherwise maltreated. The most unfortunate thing which can befall a captive woman is to be claimed by two persons. In this case, she is either shot or delivered up for indiscriminate violence.

These banditti will not long revel in scenes of plunder and violence. Yesterday Colonel Doniphan's regiment was directed to march into their country and destroy it. One of their principal settlements, and farming establishments, is said to be nearly due west from here, about two days' march; the road leading through the formidable pass above noted.

Yesterday and to-day we came across some unoccupied strips of ground. Their number yesterday was greater than to-day; for, since we passed Pulvidera, the sand hills enroach on the river and leave the valley scarcely a mile wide. The cotton-wood, however, is getting more plentiful, and we have not been obliged to use the bois de vache[45] in cooking for some days.

To-night, I measured two sets, or 18 lunar distances, east and west moon, 12 altitudes of polaris, 10 of andromedæ, and 8 of alpha Lyræ.

The resulting latitude 34° 07′ 39″.

Longitude 7*h*. 07*m*. 54*s*.

October 5.—Camp near Socoro. Last night a Mexican came into camp, and said we should now leave the river and strike for the Gila, nearly due west. He was one of the men engaged by me as guide while on the first trip to Tomé. We accordingly moved only six miles to-day, and encamped a little north of Socoro, preparatory to taking the hills to-morrow. The prospect is forbidding; from the Sierra Lescadron,[46] opposite the amphitheatre, as far south as the eye can reach on the western side of the river, is a chain of precipitous basaltic mountains, traversed by dykes of trap. Through these we are to pass.

I rode to the base of the Sierra Socoro, overhanging the town of that name, and about three miles distant from the river. It is a confused mass of volcanic rocks, traversed by walls of a reddish colored basalt and seams of porphyritic lava and metamorphic sand-stone. In one or two places, where the water had washed away the soil near the base, I found specimens of galena and copper ore, very pure; but of the extent of these beds I can form no opinion, nor can I say positively they were not erratic. The ore in this mountain is said, at one time, to have been worked for gold; but the difficulty of getting quicksilver induced the operator to move to a mine on the opposite side of the river, near Manzanas,[47] where, it is said, quicksilver is to be found; but the specimens from that place, of what the inhabitants exhibited as rock containing quicksilver, on

prelude to Cu mining

analysis, were found to contain none. Should the command halt to-morrow to prepare for the mountains, I shall be enabled to give the place a more thorough examination.

To the east, close to the banks of the river, still runs the Sierra Grande, which commences at Zandia with such towering heights, but here tapers down to moderate sized hills. The formation is apparently of different colored sandstone, and wherever the stratification shows itself, dipping about 25 degrees to the south and east; but in some places it is horizontal, and in others showing great disturbance. With the glass may be seen walls of light colored stone, basalt or trap, running off for miles in a straight line, nearly north and south. The town of Socoro, containing about one hundred inhabitants, is prettily situated in the valley of the river, which is here almost circular, and about three or five miles in diameter. The church, as usual, forms the salient point, which meets the eye at a great distance.

The growth on the sand plains to-day was chiefly iodeodonda and a little stunted acacia. The iodeodonda[48] is a new plant, very offensive to the smell, and, when crushed, resembling kreosote. Its usual height is the height of a man on horseback, and is the only bush which mules will not eat when excessively hungry; besides this were two well-known and widely diffused grasses, the reed grass and a short, salty grass, Uniola distichophylla.

October 6. It was determined to follow the river still further down before turning west. Great difficulty was experienced in getting teams to assist us. The Mexicans we had engaged, as if by universal agreement, refused to go farther, alleging fear of the Apaches; but the truth was they expected to extort money. In Armijo's day, when a thing was wanted for government, it was taken. Our treatment turned their heads, and, like liberated slaves, there was no limit to their expectations and exactions. We used every means to bring these people to reason, but finding them intractable, and that the progress of the army was arrested, the quartermaster, Major Swords, seized what wagons and animals were needed, and paid a liberal price for them. To

ting
an? Amer
ary policy

our surprise they were perfectly enchanted at the whole business; first at being paid at all, but principally at being relieved from the responsibility of deciding for themselves what they would take for the chattels. A likely boy, who had been engaged to go to California as arriero,[49] was to-day claimed by his creditor or master. He owed the man $60, and was, by the law of the country, paying his debt by serving at $2 per month; out of this he was to feed and clothe himself, his master being sutler. It was plain he could not pay his debt in his life-time. When such debtors get old and unfit for labor, it is the custom to manumit them with great pomp and ceremony. This makes the beggars of the country. The poor debtors thus enthralled for life, for a debt of $60, are called peons, and constitute, as a class, the cheapest laborers in the world. The price of the labor for life of a man was, in the case we have stated, $60, without any expense of rearing and maintenance in infancy or old age, the wages covering only a sum barely sufficient for the most scanty supply of food and clothing.

indenture

I saw some objects perched on the hills to the west, which were at first mistaken for large cedars, but dwindled by distance to a shrub. Chaboneau (one of our guides) exclaimed "Indians! there are the Apaches." His more practised eye detected human figures in my shrubbery. They came in and held a council, swore eternal friendship, as usual, no doubt with the mental reservation to rob the first American or Mexican they should meet unprotected.

Indian pacts
deceit

The women of this tribe rode à la Duchesse de Berri, ? and one of them had an infant, about two months old, swung in a wicker basket at her back. Their features were flat, and much more negro-like than those of our frontier Indians; a few Delawares in camp presented a strong contrast, in personal appearance and intelligence, with the smirking, deceitful-looking Apache. Some of them had fire-arms, but the greater part were armed with lance and bow. They were generally small legged, big bellied and broad shouldered.

Came into camp late, and found Carson[50]? with an express from California, bearing intelligence that that country had surrendered without a blow, and that the American flag floated in every port.

conquest of
Calif

October 7.—Camp 68. Two Mexicans deserted from my party last night, frightened by the accounts of the hardship's of the trip brought by Carson and his party. Yesterday's news caused some changes in our camp; one hundred dragoons, officered by Captain Moore and Lieutenants Hammond and Davidson, with General Kearny's personal staff, Major Swords, Captain Johnston, Captain Turner, adjutant general to the army of the west, Messrs. Carson and Robideaux, my own party, organized as before mentioned, and a few hunters of tried experience, formed the party for California. Major Sumner, with the dragoons, was ordered to retrace his steps. Many friends here parted that were never to meet again; some fell in California, some in New Mexico, and some at Cerro Gordo.? where

Arrived in camp late, after a most fatiguing day, watching and directing the road for my overloaded and badly horsed wagon. I sat up until very late, making astronomical observations.

About two miles below the camp of last night, we passed the last settlement, and in about four miles left the beaten road, which crosses the east side of the river, and thenceforth a new road was to be explored. The land passed over to-day, although unsettled, is incomparably the best in New Mexico; the valley is broader, the soil firmer, and the growth of timber, along the river, larger and more dense.

The ruins of one or two deserted modern towns, probably Valverde, and remains of ditching, for irrigation, were passed to-day. The frequent incursions of the Indians are said to cause the desertion of this part of the valley.

r
redation

As we approached our camp, the lofty range of mountains sweeping to the northwest, around the head of the Gila, became unmasked, at the same moment that the Puerco[51] range showed themselves on the eastern side of the river Del Norte, stretching boldy and far away to the south. This last ridge of mountains is to the east, and altogether distinct from that commencing at Zandia, and tapering off to the south close to the river.

I have heretofore revelled in the perfect stillness and quietude of the air and scenery of New Mexico; yesterday and to-day have been exceptions, for the wind has been very high from the south, and the dust overwhelming.

Computed to-day the height of the Socoro mountain to be 2,700 feet above the level of the plain. Several officers guessed at the height of the mountain, and the mean of all the guesses was 1,200 feet, and the distance of the peak only two and a half miles, while it was, in fact, upwards of four miles. He who attempts to reckon the height and distance of hills in this pure, dry atmosphere, after coming from ours, will always fall as much short of the mark.[52]

One or two large white cedars[53] were seen to-day, and, in addition to the usual plants, was that rare one cevallia sinuata, and a species of wild liquorice, but with a root not sweet, like the European kind.

The latitude of this camp by 10 altitudes of Polaris, 33° 41′ 19″. And the longitude, from 18 observations, of east and west stars, 7*h*. 08*m*. 57*s*.

October 8.—Camp 69. The valley of the Del Norte, as we advanced, loses what little capacity for agriculture it possessed. The river commences to gather its feeble force into the smallest compass to work its way around the western base of Fra Cristobal mountain. The Chihuahua road runs on the eastern side, and that part of it is the dreaded jornado[54] of the traders, where they must go, most seasons of the year, ninety miles without water.

Our road over hill and dale led us through a great variety of vegetation, all totally different from that of the United States. To-day's observations of the plants may be taken as a fair specimen of the southern part of New Mexico. First, there were cacti in endless variety and of gigantic size, the disagreeable Larrea Mexicana, Obione canescens, Tessaria borealis, Diotis lanata, Franseria acanthocarpa, several varieties of mezquite,[55] and among the plants peculiar to the ground passed over, were several compositæ, a species of Malva convolvulus, an unknown shrub found in the beds of all deserted rivers; larger grama, as food for horses, nearly equal to oats, and Dalea formosa, a much branched shrub, three feet high, with beautiful purple flowers. The infinite variety of cacti could not be brought home for analysis, and this department of the Flora must be left to the enterprise of some traveller, with greater means of transportation than we possessed. A great many were sketched, but not, it is feared, with sufficient precision to classify them.

The table lands, reaching to the base of the mountains to the west, are of sand and large round pebbles, terminating in steep hills from a quarter to a half mile from the river, capped with seams of basalt. Some curious specimens of soft sandstone were seen to-day, of all shapes and forms, from a batch of rolls to a boned turkey.

October 9. The country becomes broken, and the valley narrows into a cañon which sweeps at the base of Fra Cristobal mountain, making it necessary to rise to the table lands on the west side, which we found traversed by deep arroyos, crowned on their summits by basalt, underlayed by sandstone.

I shot two or three quails, (*ortix squamosa*?) differing from ours in their plumage, but entirely similar to them in their habits. We also killed a hawk resembling, in all respects, our sparrow-hawk, except in the plumage, which like the quail, was that of the landscape, lead colored.

false

Game in New Mexico[56] is almost extinct, if it ever existed to any extent. To-day we saw a few black tailed rabbits, and last night Stanly killed a common Virginia deer.

Three distinct ranges of mountains, on the west side of the river, are in view to-day, running apparently northwest, and nearly parallel to each other. The lesser range commences at Socoro; the next at Fra Cristobal mountain, and the last at a point farther west, yet to be determined. The ravines between are broad, and show the beds of dry streams, which would probably be found watered when near their sources. A butte was seen in the distance, close to the river, and surrounded by trees, which was at first taken for an adobe house, but the near approach showed it a conglomerate cemented by lime, which had been left standing when the surrounding earths were washed away. At its base I found some rare specimens of olivine set in lava. The road was unbroken, obstructed by bushes, and so bad that the wagons made only 11½ miles, and the teams came into camp "*blown*" and staggering after their day's work. Expecting nothing better ahead, it was determined to leave the wagons and send back for pack-saddles. My own pack-saddles having been brought along, I had time to observe the rates of my chronometers and make other preparations necessary for so important a change in our mode of proceeding.

October 10th, 11th, and 12th were passed in camp waiting for the pack-saddles.

We are now 203 miles from Santa Fé, measured along the river; 16 circum-meridian altitudes of beta Aquarii, and 17 altitudes of Polaris give me for the latitude of the place 33° 20′ 02″, and the longitude, by the chronometer, 7*h.* 08*m.* 57*s.* We must soon leave the river. A cross section of it at this point is 118 feet wide, with a mean depth of 14 inches, flowing over large round pebbles, making it unsuitable for navigation with any kind of boats.

The height of our first camp on the Del Norte, one mile north of San Felippe, indicated by the barometer, was 5,000 feet, showing we had descended, from Santa Fé, 1,800 feet.

Here the height is 4,241 feet, showing an average fall in the Del Norte, from the camp near San Felippe to this place, of four feet and a half per mile. The greater part of the way the fall is uniform and unobstructed by rapids, and the river flows, for the most part, over a bed of sand, without any sensible increase or diminution in its volume of water. Sometimes its tranquil course is rippled by large angular fragments of basalt, trap, lava, and amygdaloid, which everywhere strew the table lands of New Mexico.

Our present camp is in a valley 70 or 100 acres in extent, well grassed and wooded, and apparently untrodden by the foot of man; for here we saw, for the first time in New Mexico, any considerable "signs" of game in the tracks of the bear, the deer, and the beaver. We flushed several bevies of the blue quail, saw a flock of wild geese, summer duck, the avocet, and crows.

Above and below us is a cañon, and on the eastern side of the river the Fra Cristobal shoots up to a great height. We saw on its sides, reaching nearly to the top, large black objects, which we could not distinguish with our indifferent glasses, but which must be either shrubbery or rocks.

For the last night or two it has been unusually cold, the thermometer ranging from 25° to 32° Fahrenheit, but during the day it mounts up to 75° and 80°.

October 13. Moved one mile to get better grass. Just as we had pitched our new camp Lieutenant Ingalls came up with a mail, and gave the pleasant information that the saddles were only about six hours behind.

October 14. We parted with our wagons, which were sent back under charge of Lieutenant Ingalls, and, in doing so, every man seemed to be greatly relieved. With me it was far otherwise. My chronometers and barometer, which before rode so safely, were now in constant danger. The trip of a mule might destroy the whole. The chronometers, too, were of the largest size, unsuited to carry time on foot or horseback. All my endeavors, in the 24 hours allowed me in Washington to procure a pocket chronometer, had failed. I saw then, what I now feel, the superiority of pocket over large chronometers for expeditions on foot or horseback. The viameter for measuring distances, heretofore attached to the wheel of the instrument wagon, was now attached to the wheel of one of the small mounted howitzers.

The valley narrows into a cañon at Bush peak, and opens again a mile or so wide, where we encamped for the night. The growth of to-day is much the same as yesterday.

Bush peak is, on its river face, a steep escarpment of basalt, and abreast of it, on the west side of the river, we saw many chips of metalliferous limestone. To-day, met a solitary Mexican mounted on a mule, driving before him a horse, with his back literally skinned with the saddle. He was beating the poor beast over the galled place. The Mexicans generally treat their horses and mules in a barbarous manner, riding and packing them when their backs are running with sores.

October 15. After travelling three and a half miles, we turned off from the Del Norte and took final leave of it at a pretty little grove, where we found two Mexicans returning from a trading expedition to the Apaches. They were attending a poor

cheros?

worn out jennet, (that had been maltreated and overtasked,) in the hope that a few days' rest would enable it to take their lazy bodies to the settlements.

At this point, several intelligent guides were detached to look up a road further south, by which Captain Cooke, who is to follow us with the Mormons, may turn the mountains with his wagons.

After mounting to the table land, some 200 feet above the valley, it is very level, except where the table land is indented by the streams from the mountains, most of which are now dry. We passed two in succession, both deep and wide enough to contain all the water of the Mississippi, and presenting the appearance of the deserted beds of once large and turbulent rivers. The beds were paved with large round pebbles, mostly of the red fieldspathic granite.

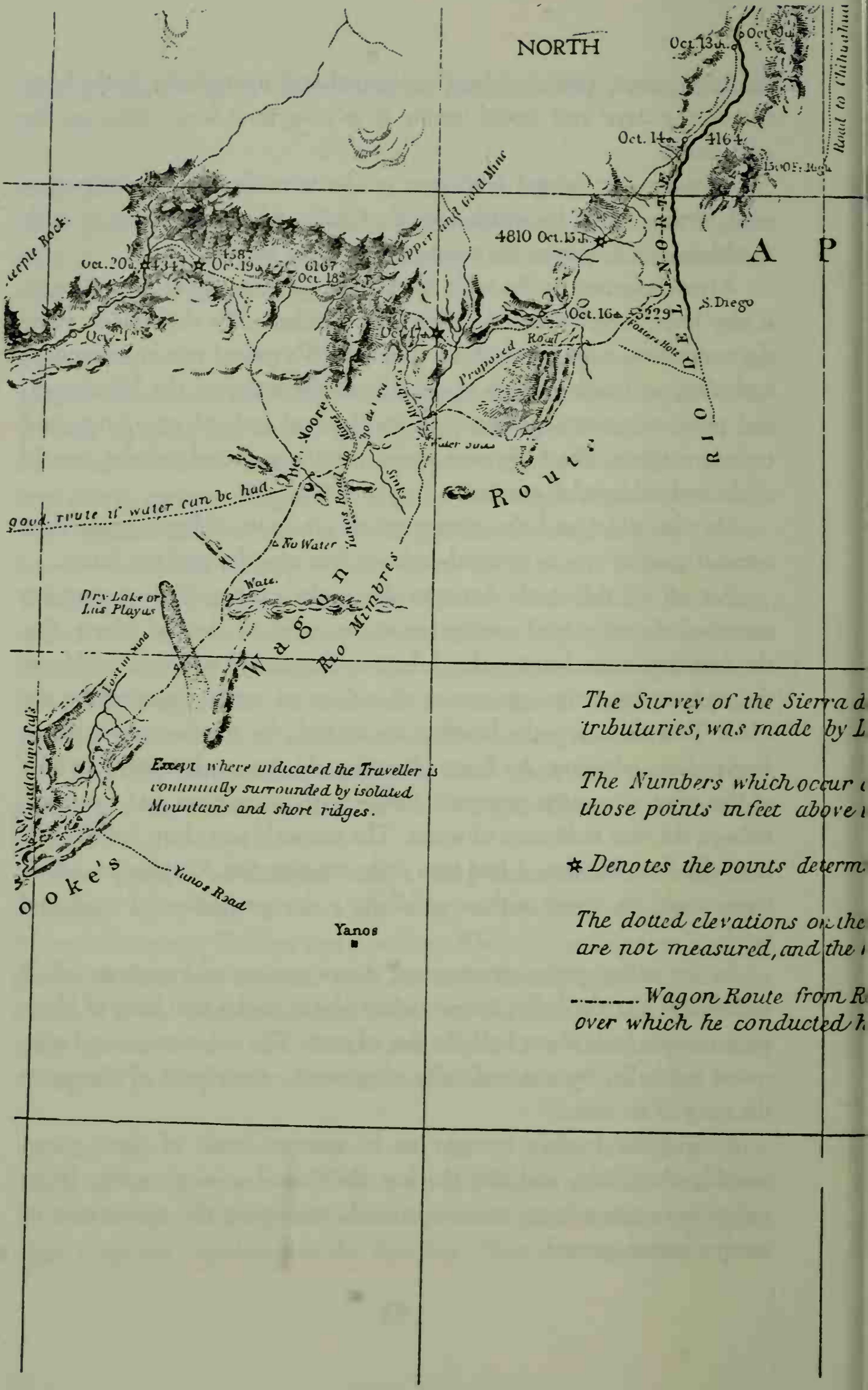
arroyo

On the table land the winter grama (a more delicate grass than summer grama) was in great abundance, but now dry and sun burnt.

Far off to the south, between the peaks of two high mountains, stretched the table land contiguous to the valley of the Del Norte. For the first time since leaving the Arkansas the mirage was seen, and gave the wide opening the appearance of a sheet of water disturbed by the wind. Two distant peaks looming up looked, for all the world, like a fore-and-aft schooner. As I was observing this my mule came to a halt at the edge of a steep precipice. Below were green trees and luxuriant foliage, the sure indication of water. The stream[57] was clear, limpid, and cool, the first, but one, I had seen since crossing the Alleghanies, where water could be drunk without imbibing a due proportion of mud and sand.

In the valley grows cotton-wood, a new variety of evergreen oak,[58] with leaves like the holly, a new variety of ash, and a new kind of black walnut, with fruit about half the size of ours. The oak was covered with round red balls, the size and color of apricots—the effects of disease or the sting of an insect.

Four miles further brought us to another creek of clear water, running sluggishly, and like the last the size of a man's waist. In its valley were many large trees, uprooted, presenting the appearance of newly cleared ground.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Oct.13th
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Road to Chihuahua
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N-O-R-T-E
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R-I-O
S. Diego
Oct.16th 5229
Foster's Hole
Proposed Road
Copper and Gold Mine
Steeple Rock
Oct.20th 4347
Oct.19th 4587
6167
Oct.18th
Oct.17th
Oct.21st
Moore
Yanos Road
Mimbres
Sinks
Water Sinks
Route
good route if water can be had
No Water
Water
Dry Lake or Las Playas
Wagon
Rio Mimbres
Lost in sand
Guadalupe Pass
Except where indicated the Traveller is continually surrounded by isolated Mountains and short ridges.
Cooke's
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The Survey of the Sierra d
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C H E S

ianes, the Sierra Grande, the Gran Quivira Region, and the Rio Puerco and its
Abert and Peck, of the Corps of Top^{l} Eng^{rs}

Map at certain points, represent the heights of
vel of the Sea, as indicated by the Barometer

by Astronomical Observation

ile, are Ranches on the right and left of the Trail, they
ts represented are therefore not to be relied upon.

ande to Pimo Village, explored and surveyed by Lieut^{t} Col^{l} Cooke; being that
attalion and train of Wagons to the Pacific.

October 8th to October 21st.

On the plains and in the dry valleys were many rare specimens of chalcedony. The only living thing seen was a small rattlesnake, the first since we left Vegas, of the size and mark of the small prairie snake, but of reddish hue, like that of the ground it inhabited.

Observed to-night for latitude and longitude; our height was (approximately) 4,810 feet above the sea.

October 16. We commenced the approach to the Mimbres[59] mountains over a beautiful rolling country, traversed by small streams of pure water, fringed with a stunted growth of walnut, live oak and ash. The soil in the valleys and to the hill tops of the best quality, covered with a luxuriant growth of grama, Chondrosium fœnum differing from the large grama. Nothing but rain is required to make this part of the country inhabitable. There were several new and beautiful varieties of cactus, and the Diotis lanata grew in great luxuriance; one a miniature tree, with the stalk six inches in diameter.

This must one day become a great grazing country, particularly for sheep. The pure dry air is eminently adapted to them, and they are said to be in all New Mexico very prolific, an ewe seldom failing to drop two lambs.

October 17. We ascended from the stream, on which we were encamped, by a narrow valley for 2½ hours before reaching the summit between it and the Mimbres, which was so indistinct that I passed it several miles before discovering it. We descended in an arroyo towards the Rio Mimbres, very narrow, and full of shattered pitch stone; the sides and bank covered with a thick growth of stunted live oak. In full view, nearly the whole time of our descent, was a mountain of peculiar symmetry, resembling the segment of a spheroid. I named it "the Dome." Our road led along its base to the north; another path leading to Janos, a frontier town in Sonora, passes down the Mimbres on the south side. The Mimbres was traversed only a mile; for that distance its valley was truly beautiful, about one mile wide, of rich fertile soil, densely covered with cotton-wood, walnut, ash, &c. It is a rapid, dashing stream, about fifteen feet wide and three deep, affording sufficient water to irrigate its beautiful valley. It is filled with trout. At this place we found numberless Indian lodges, which had the appearance of not having been occupied for some time. We turned westward and ascended all the way to our camp.

The mountains appeared to be formed chiefly of a reddish amygdaloid and a brown altered sandstone, with chalcedonic coating. In places, immense piles of conglomerate protruded; disposed in regular strata, dipping to the south at an angle of 45°. There was also one pile of volcanic glass brittle, in strata about half an inch thick, dipping 45° to the south. The character of the country and its growth to-day are very similar to those of yesterday; several new plants and shrubs, amongst which was the cercocarpus[60] parvifolius, a curious rosaceous shrub, "with a spiral, feathery tail, projecting from each calyx when the plant is in seed." The spiral tailed or barbed seed-vessels fall when ripe, and, impelled by the wind, work into the ground by a gyratory motion. The cedar seen to-day was also very peculiar; in leaf resembling the common cedar of the States, but the body like the pine, except that its bark was much rougher. (For the rest of the day's growth, see catalogue of plants for this date.)

At night, 12 circum-meridian altitudes of beta Aquarii, and seven altitudes of Polaris, give for the latitude of the camp 42° 11″.[61]

October 18. A succession of hills and valleys covered with cedar, live oak and some long-leafed pine. We passed at the foot of a formidable bluff of trap, running northwest and southeast, which I named Ben Moore, after my personal friend, the gallant Captain Moore, of the 1st dragoons. In many places the path was strewed with huge fragments of this hard rock, making it difficult for the mules to get along. Turning the north end of Ben Moore bluff, we began to drop into the valley of what is supposed an arm of the Mimbres, where there are some deserted copper mines.[62] They are said to be very rich, both in copper and gold, and the specimens obtained sustain this assertion. We learned that those who worked them made their fortunes; but the Apaches did not like their proximity, and one day turned out and destroyed the mining town, driving off the inhabitants. There are the

more mineral wealth

remains of some twenty or thirty adobe houses, and ten or fifteen shafts sinking into the earth. The entire surface of the hill into which they are sunk is covered with iron pyrites and the red oxide of copper.

Many veins of native copper were found, but the principal ore is the sulphuret. One or two specimens of silver ore were also obtained.

Mr. McKnight, one of the earliest adventurers in New Mexico, was the principal operator in these mines, and is said to have amassed an immense fortune. On his first arrival in the country he was suspected to be an agent of the United States, and thrown into prison in Sonora, where he was kept in irons for eleven years. He is said to have stated that the gold found in the ore of these mines paid all the expenses of mining, and the transportation of the ore to the city of Mexico, where it was reduced.

an attempt
epand Amer

We were disappointed in not meeting the Apaches yesterday and to-day. This afternoon three men came in dressed very much like the Mexicans, mounted on horses. They held a talk, but I do not know the purport. This afternoon I found the famous mezcal,[63] (an agave,) about three feet in diameter, broad leaves, armed with teeth like a shark; the leaves arranged in concentric circles, and terminating in the middle of the plant in a perfect cone. Of this the Apaches made molasses, and cook it with horse meat.

We also found to-day the Dasylirion[64] graminifolium, a plant with a long, narrow leaf, with sharp teeth on the margin, with a stalk eighteen feet high. According to Doctor Torrey, it has lately been "described by Zuccarini," who says "four species of this genus are now known, all of them Mexican or Texan."

The elevation of this camp was 6,167 feet.

October 19. I tried last night to get observations for latitude, &c., but the early part was cloudy, and we fell asleep and did not wake till broad daylight. In the afternoon there was a thunderstorm to the west, which swept around towards the north, where it thundered and lightened till nearly 9 o'clock. The country passed over in the first part of to-day was beautiful in the extreme; a succession of high, rolling hills, with mountains in the distance. The soil rich, and waving with grama. The latter part was more barren, and covered with artemisias.

The spring of San Lucia,[65] 13½ miles from the copper mines, very large, and impregnated with sulphur, is in a beautiful valley, surrounded, at the distance of ten or fifteen miles, with high mountains. This was the place appointed for meeting the Apaches, at 11, a. m.; but arriving at 12, and not finding them as we expected, and the grass all eaten up, we moved on to Night creek,[66] making 30 miles. We halted at night on unknown ground, by the side of a creek, so miry that the mules, some of which had not drunk since morning, refused to approach it. It was dark; many of the men mistook the trail and got on the wrong side of the treacherous creek. The mules began to bray for water, and the men to call out for their messmates; all were in confusion. My thoughts of last night came vividly to my mind, as I heard the voice of my chronometer man on the other side, asking to be shown the way across. I sent him word to retrace his steps two or three miles.

The assembly call was sounded, which seemed to settle all things; and, as far as the clouds would allow me, I obtained observations. This is only the second time since leaving the 100th degree of longitude that I have been interrupted by clouds in my observations. Nothing has been heretofore more rare than to see the heavens overcast.

An Apache has just come in, and says the people who agreed to meet us at the spring yesterday are coming on with some mules to trade.

Three miles from the camp of last night we had reached the "divide," and from that point the descent was regular and continuous to Night creek. The ravines on either side of the "divide" are covered with fragments of blue limestone and rich specimens of the magnetic oxides of iron.

October 20. My curiosity was excited to see by daylight how my camp was disposed and what sort of place we were in. It was quite certain the broad, level valley we had been travelling the last few miles was narrowing rapidly, by the intrusion of high precipices; and the proximity of great mountains in confused masses indicated some remarkable change in the face of the country. We were, in truth, but a few miles from the Gila, which I was no less desirous of seeing than the Del Norte.

che
peration

The general sent word to the Apaches he would not start till 9 or 10. This gave them time to come in, headed by their chief, Red Sleeve.[67] They swore eternal friendship to the whites, and everlasting hatred to the Mexicans. The Indians said that one, two or three white men might now pass in safety through their country; that if they were hungry, they would feed them; or, if on foot, mount them. The road was open to the American now and forever. Carson, with a twinkle of his keen hazel eye, observed to me, "I would not trust one of them."

The whole camp was now busily engaged in attempting to trade. The Indians had mules, ropes, whips, and mezcal. We wished to get a refit in all save the mezcal, offering to give in exchange red shirts, blankets, knives, needles, thread, handkerchiefs, &c., &c.; but these people had such extravagant notions of our wealth, it was impossible to make any progress. At length the call of "boots and saddles" sounded. The order, quickness and quietude of our movements seemed to impress them. One of the chiefs, after eyeing the general with apparent great admiration, broke out in a vehement manner: "You have taken New Mexico, and will soon take California; go, then, and take Chihuahua, Durango, and Sonora. We will help you. You fight for land; we care nothing for land; we fight for the laws of Montezuma[68] and for food. The Mexicans are rascals; we hate and will kill them all." There burst out the smothered fire of three hundred years! Finding we were more indifferent than they supposed to trade, and that the column was in motion, they became at once eager for traffic.

che offer
liance

They had seen some trumpery about my camp which pleased them, and many of them collected there. My packs were made. One of my gentlest mules at that moment took fright, and went off like a rocket on the back trail, scattering to the right and left all who opposed him. A large, elegant looking woman, mounted a straddle, more valiant than the rest, faced the brute and charged upon him at full speed. This turned his course back to the camp; and I rewarded her by half a dozen biscuit, and through her intervention, succeeded in trading two broken down mules for two good ones, giving two yards of scarlet cloth in the bargain. By this time a large number of Indians had collected about us, all differently dressed, and some in the most fantastical style. The Mexican dress and saddles predominated, showing where they had chiefly made up their wardrobe. One had a jacket made of a Henry Clay flag, which aroused unpleasant sensations, for the acquisition, no doubt, cost one of our countrymen his life. Several wore beautiful helmets, decked with black feathers, which, with the short skirt, waist belt, bare legs and buskins, gave them the look of pictures of antique Grecian warriors. Most were furnished with the Mexican cartridge box, which consists of a strap round the waist, with cylinders inserted for the cartridges.

These men have no fixed homes. Their houses are of twigs, made easily, and deserted with indifference. They hover around the beautiful hills that overhang the Del Norte between the 31st and 32nd parallels of latitude, and look down upon the States of Chihuahua and Sonora; and woe to the luckless company that ventures out unguarded by a strong force. Their hills are covered with luxuriant grama, which enables them to keep their horses in fine order, so that they can always pursue with rapidity, and retreat with safety. The light and graceful manner in which they mounted and dismounted, always on the right side, was the admiration of all. The children are on horseback from infancy. There was amongst them a poor deformed woman, with legs and arms no longer than an infant's. I could not learn her history, but she had a melancholy cast of countenance. She was well mounted, and the gallant manner in which some of the plumed Apaches waited on her, for she was perfectly helpless when dismounted, made it hard for me to believe the tales of blood and vice told of these people. She asked for water, and one or two were at her side; one handed it to her in a tin wash basin, which, from its size, was the favorite drinking cup.

nomadic
[illegible]

why?

We wended our way through the narrow valley of Night creek.

On each side were huge stone buttes shooting up into the skies.

At one place we were compelled to mount one of these spurs almost perpendicular. This gave us an opportunity of seeing what a mule could do. My conclusion was, from what I saw, that they could climb nearly as steep a wall as a cat. A pack slipped from a mule, and, though not shaped favorably for the purpose, rolled entirely to the base of the hill, over which the mules had climbed.

A good road was subsequently found turning the spur and following the creek, until it debouched into the Gila, which was only a mile distant.

Some hundred yards before reaching this river the roar of its waters made us understand that we were to see something different from the Del Norte. Its section, where we struck it, (see the map,) 4,347 feet above the sea, was 50 feet wide, and an average of two feet deep. Clear and swift, it came bouncing from the great mountains which appeared to the north about sixty miles distant. We crossed the river, its large round pebbles and swift current causing the mules to tread warily.

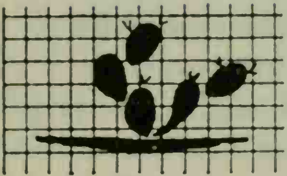
We followed its course, and encamped under a high range of symmetrically formed hills overhanging the river. Our camp resembled very much the centre of a yard of huge stacks.

We heard the fish playing in the water, and soon those who were disengaged were after them. At first it was supposed they were the mountain trout, but, being comparatively fresh from the hills of Maine, I soon saw the difference. The shape, general appearance, and the color, are the same; at a little distance you will imagine the fish covered with delicate scales, but, on closer examination, you will find that they are only the impression of scales. The meat is soft, something between the trout and the catfish, but more like the latter. They are in great abundance.

t fish?

We saw here also, in great numbers, the blue quail.[69] The bottom of the river is narrow, covered with large round pebbles. The growth of trees and weeds was very luxuriant; the trees chiefly cotton-wood, a new sycamore, mezquite, pala,[70] (the tallow tree of our hunters,) a few cedars, and one or two larch. There were some grape and hop vines.

16 circum-meridian observations of beta Aquarii, and 9 of Polaris, give the latitude of this camp 32° 50′ 08″. Its approximate longitude is 108° 45′ 00″.



The Gila River and the Dry Arroyos . . . Steeple Rock is Named . . . Prehistoric Ruins . . . Apache Traders . . . Among the "Pimos" and Maricopas.

October 21. After going a few miles, crossing and recrossing the river a dozen times, it was necessary to leave its bed to avoid a cañon. This led us over a very broken country, traversed by huge dikes of trap and walls of basalt. The ground was literally covered with the angular fragments of these hard rocks.

From one of these peaks we have had an extended view of the country in all directions. The mountains run from northwest to southeast, and rise abruptly from the plains in long narrow ridges, resembling trap dykes on a great scale. These chains seem to terminate at a certain distance to the south, leaving a level road, from the Del Norte about the 32nd parallel of latitude, westward to the Gila. These observations, though not conclusive, agree with the reports of the guides, who say Colonel Cooke will have no difficulty with his wagons.

The mountains were of volcanic rock of various colors, feldspathic granite, and red sandstone, with a dip to the northwest, huge hills of a conglomerate of angular and rounded fragments of quartz, basalt, and trap, cemented by a substance that agrees well with the description I have read of the puzzolana of Rome.

The earth in the river bed, where it was not paved with the fragments of rocks, was loose, resembling volcanic dust, making it unsafe to ride out of the beaten track. A mule would sometimes sink to his knee; but the soil was easily packed, and three or four mules in advance made a good firm trail.

This was a hard day on the animals, the steep ascents and descents shifting the packs, and cutting them dreadfully.

The howitzers did not reach camp at all.

A few pounds of powder would blast the projections of rock from the cañon, and make it passable for packs, and possibly for wagons also. The route upon which the wagons are to follow is, however, to the south of this. Under this date, in the catalogue of plants, will be found many differing from those heretofore observed; amongst them, a new shrub, with an edible nut, and many varieties of mezquite.

October 22. The howitzers came up about 9 o'clock, having, in the previous day's work, their shafts broken, and, indeed, everything that was possible to break about them. We again left the river to avoid a cañon, which I examined in several places, and saw no obstacles to a good road. The cañon was formed by a seam of basalt, overlaying limestone and sandstone in regular strata. Through these the river cuts its way.

shortage

Many deep arroyos have paid tribute to the Gila, but in none have we yet found water. Following the bed of one of these, to examine the eccentric geological formation it displayed, I found unknown characters written on a rock, copies of which were made, but their antiquity is questionable.

We were now fast approaching the ground where rumor and the maps of the day place the ruins of the so-called Aztec towns. This gave the characters alluded to additional interest; they were indented on a calcareous sandstone rock, chrome-colored on the outside, presenting a perfectly white fracture. This made them very conspicuous, and easily seen from a distance. The coloring matter of the external face of the rock may proceed from water, as there was above the characters a distinct water line, and every appearance that this gorge had more than once been the scene of overflows and devastation.

We encamped on a bluff, high above the river, in view of a rock which we named, from its general appearance, Steeple rock.[71]

Latitude of our camp to-night, by 17 circum-meridian altitudes of Beta Aquarii, 32° 38′ 13″. Longitude 109° 07′ 30″.

October 23. Last night the heavens became overcast, the air damp, and we expected, for the first time since leaving Santa Fé, (a month to-morrow,) to have a sprinkle of rain; but, at 9 this morning, the clouds had all been chased away, and the sun careered up in undisputed possession of all above the horizon. The atmosphere resumed its dryness and elasticity, and at night the stars looked brighter, and the depth of the spaces between greater than ever.

The changes of temperature are very great, owing to the distance from the influence of large masses of water, and, if they were accompanied by corresponding changes in humidity, they would be insupportable. Last night we went to bed with the thermometer at 70° Fahrenheit, and awakened this morning shivering, the thermometer marking 25°; yet, notwithstanding, our blankets were as dry as though we had slept in a house.

The table land, 150 feet above the river, was covered so thick with large paving pebbles as to make it difficult to get a smooth place to lie upon.

The growth of to-day and yesterday, on the hills and in the valleys, very much resembles that on the Del Norte; the only exception being a few new and beautiful varieties of the cactus. After leaving our last night's camp, for a mile, the general appearance, width of the valley, and soil, much resemble the most fertile parts of that river. This, so far, has decidedly the best soil, and the fall of the river being greater, makes it more easy to irrigate.

To-day we passed one of the long-sought ruins. I examined it minutely, and the only evidences of handicraft remaining were immense quantities of broken pottery, extending for two miles along the river. There were a great many stones, rounded by attrition of the water, scattered about; and, if they had not occasionally been disposed in lines forming rectangles with each other, the supposition would be that they had been deposited there by natural causes.

October 24. To-day we laid by to recruit. Although the moon was not in a favorable position, I availed myself of the opportunity to get a few lunar distances; 18 circum-meridian altitudes of Beta Aquarii, and 12 altitudes of Polaris, give for the latitude of the place 32° 44′ 52″, and 8 distances between the moon and Fomalhaut give for the longitude 109° 22′ 00″. We feasted to-day on blue quail and teal, and at night Stanly came in with a goose. "Signs" of beaver and deer were very distinct; these, with the wolf, constitute the only animals yet traced on the river.

October 25. The general character of the country is much the same as before represented; but towards camp it broke into irregular and fantastic-looking mountains. A rose-colored tint was imparted to the whole landscape, by the predominance of red feldspar. The road became broken and difficult, as it wound its way around two short cañons.

We were now approaching the regions made famous in olden times by the fables of Friar Marcos, and eagerly did we ascend every mound, expecting to see in the distance what I fear is but the fabulous "Casa Montezuma." Once, as we turned a sharp hill, the bold outline of a castle presented itself, with the tops of the walls horizontal, the corners vertical, and apparently one front bastioned. My companion agreed with me that we at last beheld this famed building; on we spurred our unwilling brutes; restless for the show, I drew out my telescope, when to my disappointment a clay butte, with regular horizontal seams, stood in the place of our castle; but to the naked eye the delusion was complete. It is not impossible that this very butte, which stands on an imposing height in the centre of a vast amphitheatre of turreted hills, has been taken by the trappers, willing to see, and more especially to report, marvelous things for the "Casa Montezuma." The Indians here do not know the name Aztec. Montezuma is the outward point in their chronology; and as he is supposed to have lived and reigned for all time preceding his disappearance, so do they speak of every event preceding the Spanish conquest as of the days of Montezuma.

mence
aztec power
o

The name, at this moment, is as familiar to every Indian, Puebla,[72] Apache, and Navajoe as that of our Saviour or Washington is to us. In the person of Montezuma, they unite both qualities of divinity and patriot.

We passed to-day the ruins of two more villages similar to those of yesterday. The foundation of the largest house seen yesterday was 60 by 20 feet; to-day 40 by 30. About none did we find any vestiges of the mechanical arts, except the pottery; the stone forming the supposed foundation was round and unhewn, and some cedar logs were also found about the houses, much decayed, bearing no mark of an edged tool. Except these ruins, of which not one stone remained upon another, no marks of human hands or foot-step have been visible for many days, until to-day we came upon a place where there had been an extensive fire. Following the course of this fire, as it bared the ground of the shrubbery, and exposed the soil, &c., to view, I found what was to us a very great vegetable curiosity, a cactus,[73] 18 inches high, and 18 inches in its greatest diameter, containing 20 vertical volutes, armed with strong spines. When the traveller is parched with thirst, one of these split open, will give sufficient liquid to afford relief. Several of these cacti were found torn from the earth, and lying in the dry bed of a stream.

primitive ruins

why?

These and the mezquite, prosopis odorata, and prosopis glandulosa, now form the principal growth. Under the name mezquite, the voyageur comprises all the acacia and prosopis family.

Last night, about nine o'clock, I heard the yell of a wolf, resembling that of a four months old pup. In a few minutes there was a noise like distant thunder. "Stampede!" shouted a fellow, and in an instant every man was amongst the mules. With one rush they had broken every rope; and this morning, when we started, one of our mules was missing, which gave us infinite annoyance. Our party is so economically provided that we could not afford to lose even a mule, and I left four men to look it up, who did not rejoin us till night.

A question arose involving a serious point of mountain law, which differs somewhat from prairie law. One of my party captured a beautiful dun colored mule, which was claimed by another party; the one claiming the prize for having first seen the animal and then catching it with the lasso. The other pleaded ownership of the rope, used as a lasso, as his title. It was settled to the satisfaction of the first.

comic relief!

The mule was one which Carson had left on his way out, and on being asked why he did not claim it, he said it was too young to be useful in packing, and as we now had plenty of beef, it would not be required for food, and he did not care about it.

October 26. Soon after leaving camp, the banks of the river became gullied on each side by deep and impassable arroyos. This drove us insensibly to the mountains, until at length we found ourselves some thousand feet above the river, and it was not until we had made sixteen miles that we again descended to it. This distance occupied eight and a half hours of incessant toil to the men, and misery to our best mules. Some did not reach camp at all, and when the day dawned one or two, who had lost their way, were seen on the side of the mountain, within a few steps of a high precipice, from which it required some skill to extricate them. The men named this pass "the Devil's turnpike," and I see no reason to change it. The whole way was a succession of steep ascents and descents, paved with sharp, angular fragments of basalt and trap. The metallic clink of spurs, and the rattling of the mule shoes, the high, black peaks, the deep dark ravines, and the unearthly looking cacti, which stuck out from the rocks like the ears of Mephistophiles, all favored the idea that we were now treading on the verge of the regions below. Occasionally a mule gave up the ghost, and was left as a propitiatory tribute to the place. This day's journey cost us some twelve or fifteen mules; one of mine fell headlong down a precipice, and, to the surprise of all, survived the fall.

The barometric height was taken several times to-day. Long and anxious was my study of these mountains, to ascertain something of their general direction and form. Those on the north side swept in something like a regular curve from our camp of last night to the mouth of the San Carlos,[74] deeply indented in two places by the ingress into the Gila of the Prieto (Black) and Azul (Blue) rivers. Those on the south, where we passed, were a confused mass of basalt and trap, and I could give no direction to the axis of maximum elevation. They seemed to drift off to the southeast. Wherever the eye wandered, huge mountains were seen of black, volcanic appearance, of very compact argillaceous limestone, tinged at times with scarlet from the quantities of red feldspar. Through these the Gila (now swift) has cut its narrow way with infinite labor, assisted by the influx of the Prieto, the Azul and San Carlos rivers. As the story goes, the Prieto flows down from the mountains, freighted with gold. Its sands are said to be full of this precious metal. A few adventurers, who ascended this river hunting beaver, washed the sands at night when they halted, and were richly rewarded for their trouble. Tempted by their success, they made a second trip, and were attacked and most of them killed by the Indians. My authority for this statement is Londeau, who, though an illiterate man, is truthful.

gold fever

October 27. After yesterday's work we were obliged to lay by to-day. The howitzers came up late in the afternoon. They are small, mounted on wheels ten feet in circumference, which stand apart about three feet, and with the assistance of men on foot, are able to go in almost any place a mule can go.

I strolled a mile or two up the San Carlos, and found the whole distance, it has its ways in a narrow cañon, worn from the solid basalt. On either side, in the limestone under the basalt were immense cavities,[75] which must have been at times the abodes of Indians and the dens of beasts. The remains of fire and the bones of animals attested this. Near its mouth we found the foundation of a rectangular house, and on a mound adjacent that of a circular building, a few feet in diameter. The ruin was probably that of a shepherd's house, with a circular building adjoining as a look-out, as there was no ground in the neighborhood which was suited for irrigation. Both these ruins were of round unhewn stones, and the first was surrounded by pieces of broken pottery. Digging a few feet brought us to a solid mass which was most likely a dirt floor, such as is now used by the Spaniards.

In my walk I encountered a settlement of tarantulas; as I approached, four or five rushed to the front of their little caves in an attitude of defence. I threw a pebble at them, and it would be hard to imagine, concentrated in so small a space, so much expression of defiance, rage, and ability to do mischief, as the tarantula presents.

Our camp was near an old Apache camp. The carcasses of cattle in every direction betokened it to have been the scene of a festival after one of their forays into the Spanish territory.

The Gila at this place is much swollen by the affluence of the three streams[76] just mentioned, and its cross section here is about 70 feet by 4. The waters change their color, and are slightly tainted with salt; indeed, just below our camp there came from the side of an impending mountain, a spring so highly charged with salt as to be altogether unpalatable. Several exquisite ferns were plucked at the spring, and a new green-barked acacia,[77] covering the plains above the river bed, but vegetation generally was very scarce; this is the first camp since leaving the Del Norte, in which we have not had good grass.[78]

At 8*h.* 40*m.*, a meteor of surpassing splendor started under the constellation Lyra, about 20 degrees above the horizon, and went off towards the south, projected against a black cloud.

The clouds interfered with my observations; but such as they were, 12 altitudes of Polaris, 9 of alpha Andromedæ and 9 of alpha Lyræ, and 16 distances between the moon and alpha Pegasi, gave the latitude of the camp 32° 53′ 16″, and the longitude 109° 31′ 34″.

October 28. One or two miles' ride, and we were clear of the Black mountains,[79] and again in the valley of the Gila, which widened out gradually to the base of Mount Graham,[80] abreast of which we encamped. Almost for the whole distance, twenty miles, were found at intervals the remains of houses like those before described. Just before reaching the base of Mount Graham, a wide valley, smooth and level, comes in from the southeast. Up this valley are trails leading to San Bernadino,[81] Fronteras and Tucsoon. Here also the trail by the Ojo Cavallo comes in, turning the southern abutments of the Black mountains, along which Capt. Cooke is to come with his wagons.

fornia
rails

At the junction of this valley with the Gila are the ruins of a large settlement. I found traces of a circular wall 270 feet in circumference. Here also was one circular enclosure of 400 yards. This must have been for defence. In one segment was a triangular shaped indenture, which we supposed to be a well. Large mezquite now grow in it, attesting its antiquity. Most of the houses are rectangular, varying from 20 to 100 feet front; many were of the form of the present Spanish houses.

Red cedar[82] posts were found in many places, which seemed to detract from their antiquity, but for the peculiarity of this climate, where vegetable matter seems never to decay. In vain did we search for some remnant which would enable us to connect the inhabitants of these long deserted buildings with other races. No mark of an edge tool could be found, and no remnant of any household or family utensils, except the fragments of pottery[83] which were everywhere strewed on the plain, and the rude corn grinder still used by the Indians. So great was the quantity of this pottery, ~~and the extent of ground covered by it, that~~ I have formed the idea it must have been used for pipes to convey water. There were about the ruins quantities of the fragments of agate and obsidian, the stone described by Prescott as that used by the Aztecs to cut out the hearts of their victims. This valley was evidently once the abode of busy, hard-working, people. Who were they? And where have they gone? Tradition among the Indians and Spaniards does not reach them.

true ?

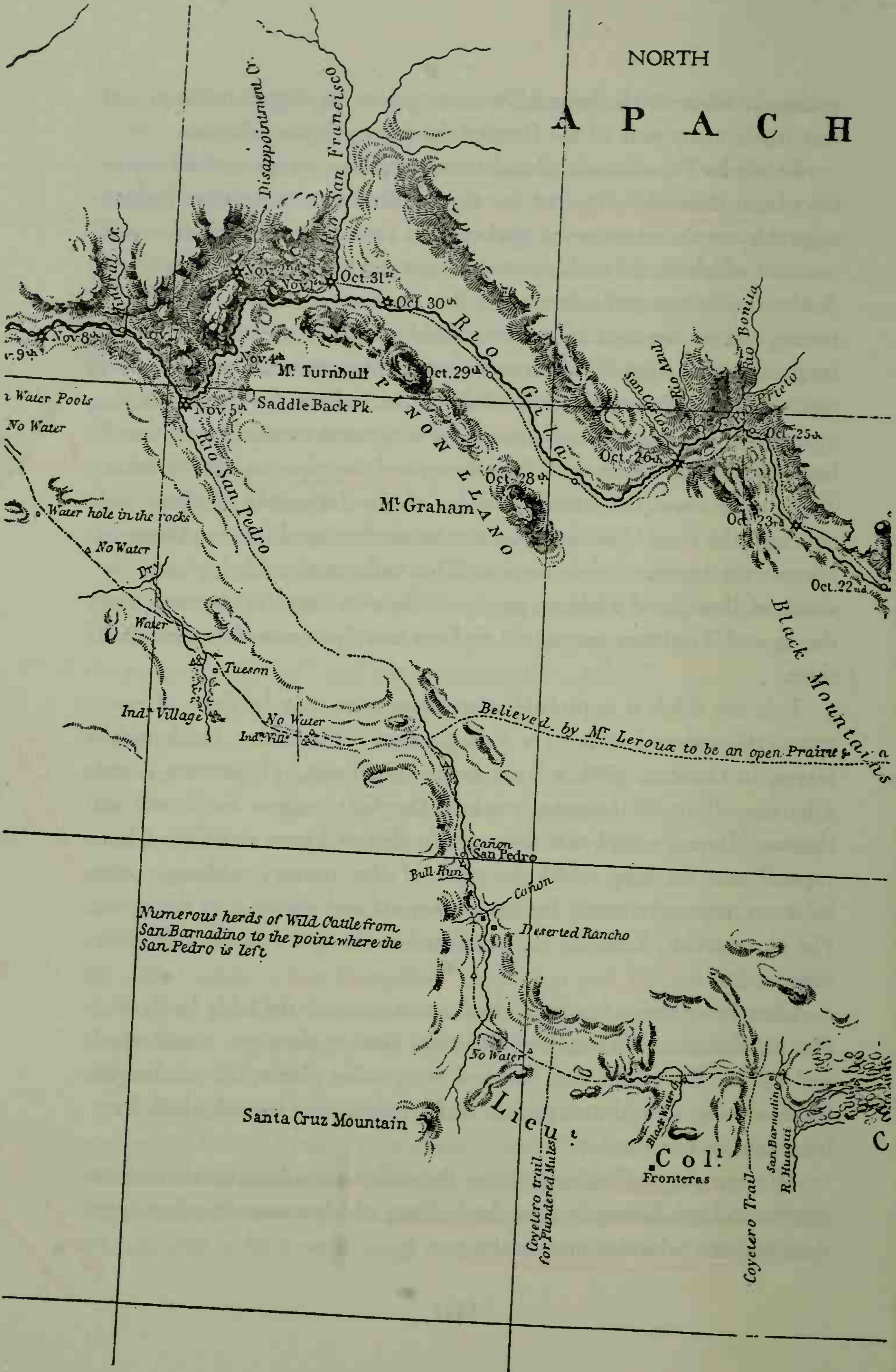
I do not think it improbable that these ruins may be those of comparatively modern Indians, for Venegas says: "The father Jacob Sedelmayer, in October, 1744, set out from his mission, (Tubutuma,) and after travelling 80 leagues, reached the Gila, where he found six thousand Papagos, and near the same number of Pimos and Coco Maricopas;" and the map which he gives of this country, although very incorrect, represents many Indian settlements and missions on this river. His observations, however, were confined to that part of the Gila river near its mouth.

many different Indi

Great quantities of green-barked acacia grew on the table lands, and also the chamiza, wild sage and mezquite; close to the river, cotton-wood and willow. We found, too, amongst many other plants, the eriodictyon Californicum, several new grasses and a sedge, very few of which have been seen on our journey.

We saw the trail of cannon up the valley very distinct; ~~that of an~~ expedition from Sonora against the Indians, ~~which was made~~ a few years since without achieving any results.

Mexican war aga Navajo. G


NORTH
APACH
Disappointment Cr.
Rio San Francisco
Oct. 31st
Nov. 2nd
Nov. 1st
Oct. 30th
RIO GILA
Nov. 8th
9th
Nov. 7
Nov. 4th
Mt. Turnbull
Oct. 29th
PINON LLANO
Water Pools
No Water
Nov. 5th
Saddle Back Pk.
Rio San Pedro
Rio Bonita
Rio Azul
San Carlos
Rio Prieto
Oct. 25th
Oct. 26th
Oct. 28th
Mt. Graham
Oct. 23rd
Oct. 22nd
Water hole in the rocks
No Water
Dry
Water
Tueson
Indn. Village
No Water
Indn. Vill.
Believed by Mr. Leroux to be an open Prairie &
Black Mountains
Cañon San Pedro
Bull Run
Cañon
Numerous herds of Wild Cattle from San Barnadino to the point where the San Pedro is left
Deserted Rancho
No Water
Santa Cruz Mountain
Lieu.t
Coyetero trail for Plundered Mules
Black Water
Col.l
Fronteras
Coyetero Trail
San Barnadino
R. Huaqui
C

October 21st to November 8th.

Wherever the river made incisions, was discoverable a metamorphic, close grained, laminated sandstone, and in many places were seen buttes of vitrified quartz, (semi-opal.)

October 29. The dust was knee deep in the rear of our trail; the soil appeared good, but, for whole acres, not the sign of vegetation was to be seen. Grass was at long intervals, and, when found, burned to cinder. A subterraneous stream flowed at the foot of Mount Graham, and fringed its base with evergreen. Every where there were marks of flowing water, yet vegetation was so scarce and crisp that it would be difficult to imagine a drop of water had fallen since last winter. The whole plain, from 3 to 6 miles wide, is within the level of the waters of the Gila, and might easily be irrigated, as it no doubt was by the former tenants of these ruined houses.

desert water sl

The crimson tinted Sierra Carlos skirted the river on the north side the whole day, and its changing profiles formed subjects of study and amusement. Sometimes we would trace a Gothic steeple; then a horse; now an old woman's face; and, again, a veritable steamboat; but this required the assistance of a light smoky cloud, drifting to the east, over what represented the chimney stack. Wherever the river abraded its banks, was seen, in horizonal strata, a yellowish argillaceous limestone.

October 30. Mount Turnbull,[84] terminating in a sharp cone, had been in view down the valley of the river for three days. To-day about three o'clock, p. m., we turned its base, forming the northern terminus of the same chain in which is Mt. Graham.

Half a mile from our camp of last night were other very large ruins which appeared, as well as I could judge, (my view being obstructed by the thick growth of mezquite,) to have been the abode of five or ten thousand souls. The outline of the buildings and the pottery presented no essential difference from those already described. But about eleven miles from the camp, on a knoll, overlooked in a measure by a tongue of land, I found the trace of a solitary house, somewhat resembling that

more ruins

of a field work *en crenallière.* The enclosure was complete, and the faces varied from ten to thirty feet.

* * *

Clouds had been seen hovering over the head of Mount Turnbull; and as we passed, the beds of the arroyos leading from it were found to be damp, showing the marks of recent running water.

Last night, about dusk, one of my men discovered a drove of wild hogs,[85] and this morning we started on their trail, but horse flesh had now become so precious that we could not afford to follow any distance from our direction, and although anxious to get a genuine specimen of this animal, we gave up the chase and dropped in the rear of the column. The average weight of these animals is about 100 pounds, and their color invariably light pepper and salt. Their flesh is said to be palatable, if the musk which lies near the back part of the spine is carefully removed.

eccaries

Many "fresh signs" of Indians were seen, but, as on previous days, we could not catch a glimpse of them. They carefully avoided us. This evening, however, as Robideaux unarmed was riding in advance, he emerged suddenly from a cavity in the ground, thickly masked by mezquite. He had discovered two Indians on horseback within twenty yards of him. The interview was awkward to both parties, but Robideaux was soon relieved by the arrival of the head of our column. The Indians were thrown into the greatest consternation; they were tolerably mounted, but escape was hopeless; two more miserable looking objects I never beheld; their legs (unlike the Apaches we left behind) were large and muscular, but their faces and bodies (for they were naked) were one mass of wrinkles, almost approaching to scales. They were armed with bows and arrows, and one with a quiver of fresh cut reeds. Neither could speak Spanish, and the communication was by signs. They were directed to go with us to camp, where they would receive food and clothing; but they resolutely refused, evidently thinking certain death awaited them, and that it would be preferable to meet it then than suffer suspense. The chief person talked all the time in a tongue resembling more the bark of a mastiff, than the words of a human being. Our anxiety to communicate to the tribe our friendly feeling, and more especially our desire to purchase mules, was very great; but they were firm in their purpose not to follow, and much to their surprise, (they seemed incapable of expressing joy,) we left them and their horses untouched.

They were supposed by some to be the Cayotes, a branch of the Apaches, but Londeau thought they belonged to the tribe of Tremblers, ! who acquired their name from their emotions at meeting the whites.

Observed to-night 12 altitudes of Polaris for latitude, and measured 9 lunar distances for longitude.

Lat. 33° 12′ 10″ Long. 110° 20′ 46″

October 31. To-day we were doomed to another sad disappointment. Reaching the San Francisco[86] about noon, we unsaddled to refresh our horses and allow time to look up a trail by which we could pass the formidable range of mountains through which the Gila cuts its way, making a deep cañon impassable for the howitzers. A yell on the top of a distant hill announced the presence of three well mounted Indians, and persons were sent out to bring them in. Our mules were now fast failing, and the road before us unknown. These Indians, if willing, could supply us with mules and show us the road. Our anxiety to see the result of the interview was, consequently, very great. It was amusing, and at the same time very provoking. They would allow but one of our party to approach. Long was the talk by signs and gestures; at length they consented to come into camp and moved forward about a hundred yards, when a new apprehension seemed to seize them, and they stopped. They said, as well as could be understood, that the two old men we met yesterday had informed their chief of our presence, and wish to obtain mules; that he was on his way with some, and had sent them ahead to sound a parley. They were better looking, and infinitely better conditioned, than those we met yesterday, resembling strongly the Apaches of the copper mines, and like them decked in the plundered garb of the Mexicans.

The day passed, but no Indians came; treacherous themselves, they expect treachery in others. At everlasting war with the rest of mankind, they kill at sight all who fall in their power. The conduct of the Mexicans to them is equally bad, for they decoy and kill the Apaches whenmaltreatment of Apache

ever they can. The former governor of Sonora employed a bold and intrepid Irishman, named Kirker, to hunt the Apaches. He had in his employment whites and Delaware Indians, and was allowed, besides a per diem, $100 per scalp, and $25 for a prisoner. A story is also told of one Johnson,[87] an Englishman, and Apache trader, who, allured by the reward, induced a number of these people to come to his camp, and placed a barrel of flour for them to help themselves; when the crowd was thickest of men, women, and children, he fired a six pounder amongst them from a concealed place and killed great numbers.

13 circum-meridian altitudes of beta Aquarii, and 10 altitudes of Polaris give the latitude of this camp 33° 14′ 29″. The longitude by 12 lunar distances E. and W. is 110° 30′ 24″.

November 1. No alternative seemed to offer but to pursue Carson's old trail sixty miles over a rough country, without water, and two, if not three days' journey. Under this, in their shattered condition, our mules must sink. We followed the Gila river six or seven miles, when it became necessary to leave it, how long was uncertain. Giving our animals a bite of the luxurious grama on the river banks, we filled every vessel capable of holding water, and commenced the jornada. The ascent was very rapid, the hills steep, and the footing insecure. After traveling five or six miles, ascending all the way, we found trails from various directions converging in front of us, evidently leading to a village or a spring; it proved to be the last. The spring consisted of a few deep holes, filled with delicious water, overgrown with cotton-wood; and, although the grass was not good, we determined to halt for the night, as the howitzers were not yet up, and it was doubtful when we should meet with water again. I took advantage of the early halt to ascend, with the barometer, a very high peak overhanging the camp, which I took to be the loftiest in the Piñon Lano range on the north side of the Gila.

Its approximate height was only 5,724 feet above the sea. The view was very extensive; rugged mountains bounded the entire horizon. Very far to the northeast was a chain of mountains covered with snow, but I could not decide whether it was the range on the east side of the Del

Norte or the Sierras Mimbres. Near the top of this peak the mezcal grew in abundance, and with the stalk of one 25 feet long we erected a flag-staff. Here, too, we found huge masses of the conglomerate before described, apparently as if it had been arrested in rolling from an impending height, but there was no point higher than this for many miles, and the intervening ravines were deep. Lower down we found a large mass of many thousand tons of the finer conglomerate, the shape of a truncated pyramid standing on its smallest base. It appeared so nicely balanced a feather might have overthrown it. A well levelled seat of large slabs of red ferruginous sandstone, altered by heat, indicated we were not on untrodden ground. It was the watch-tower of the Apache; from it he could track the valley of the Gila beyond the base of Mount Graham.

At the point where we left the Gila, there stands a cereus[88] six feet in circumference, and so high I could not reach half way to the top of it with the point of my sabre by many feet; and a short distance up the ravine is a grove of these plants, much larger than the one I measured, and with large branches. These plants bear a saccharine fruit much prized by the Indians and Mexicans. "They are without leaves, the fruit growing to the boughs. The fruit resembles the burr of a chestnut and is full of prickles, but the pulp resembles that of the fig, only more soft and luscious." In some it is white, in some red, and in others yellow, but always of exquisite taste.

On the hills we found a new shrub[89] bearing a delicious nutritious nut, and in sufficient abundance to form an article of food for the Apaches, mezcal and the fruit of the Agave Americana.

The formation near the mouth of the San Francisco is diluvid, overlaying a coarse grained highly calcareous sandstone and limestone. The mountains were chiefly of granite with red feldspar, and near our camp was discernible a stratum of very compact argillaceous limestone, dipping nearly vertically to the west.

November 2. The call to water sounded long before day-light, and we ate breakfast by the light of the moon; the thermometer at 25°. As day dawned we looked anxiously for the howitzers, which were beginning to impede our progress very much. My camp was pitched on the opposite side of a ravine, some distance apart from the main camp, the horses were grazing on the hill side still beyond and out of sight. We were quietly waiting for further orders, when our two Mexican herdsmen came running into camp, much alarmed and without their arms, exclaiming: "The Indians are driving off the mules." "To arms" was shouted, and before I could loosen a pistol from the holster my little party were in full run to the scene of alarm, each with his rifle. On turning the hill we found the horses tranquilly grazing, but the hill overlooking them was lined with horsemen. As we advanced, one of the number hailed us in Spanish, saying he wished to have "a talk."

They were Apaches, and it had been for some time our earnest desire to trade with them, and hitherto we had been unsuccessful. "One of you put down your rifle and come to us," said the Spanish-tongued Indian. Londeau, my employé before mentioned, immediately complied; I followed; but before reaching half-way up the steep hill, the Indian espied in my jacket the handle of a large horse pistol. He told me I must put down my pistol before he would meet me. I threw it aside and proceeded to the top of the hill, where, although he was mounted and surrounded by six or eight of his own men armed with rifles and arrows, he received me with great agitation. The talk was long and tedious. I exhausted every argument to induce him to come into camp. His principal fear seemed to be the howitzers, which recalled at once to my mind the story I had heard of the massacre by Johnson.? At last a bold young fellow, tired of the parley, threw down his rifle, and with a step that Forrest in Metamora might have envied, strode off towards camp, piloted by Carson. We were about to follow, when the chief informed us it would be more agreeable to him if we remained until his warrior returned.

The ice was now broken; most of them seeing that their comrade encountered no danger, followed one by one. They said they belonged to the tribe of Piñon Lanos;[90] that "they were simple in head but true of heart." Presents were distributed; they promised a guide to pilot us over the mountain, five miles distant, to a spring with plenty of good grass, where they engaged to meet us next day with 100 mules.

The mezcal flourishes here; and at intervals of a half a mile or so we found several artificial craters, into which the Indians throw this fruit, with heated stones, to remove the sharp thorns and reduce it to its saccharine state.

I observed last night for latitude and time, and our position is in latitude 33° 14′ 54″, longitude 110° 45′ 06″. Our camp was on the head of a creek which after running in a faint stream one hundred yards, disappeared below the surface of the earth. On its margin grew a species of ash unknown in the United States, and the California plane tree, which is also distinct in species from our sycamore.

November 3. Our expectations were again disappointed; the Indians came, but only seven mules were the result of the day's labor, not a tenth of the number absolutely required.

Our visitors to-day presented the same motley group we have always found the Apaches. Amongst them was a middle-aged woman, whose garrulity and interference in every trade was the annoyance of Major Swords, who had charge of the trading, but the amusement of the by-standers.

She had on a gauze-like dress, trimmed with the richest and most costly Brussels lace, pillaged no doubt from some fandango-going belle of Sonora; she straddled a fine grey horse, and whenever her blanket dropped from her shoulders, her tawny form could be seen through the transparent gauze. After she had sold her mule, she was anxious to sell her horse, and careered about to show his qualities. At one time she charged at full speed up a steep hill. In this, the fastenings of her dress broke, and her bare back was exposed to the crowd, who ungallantly raised a shout of laughter. Nothing daunted, she wheeled short round with surprising dexterity, and seeing the mischief done, coolly slipped the dress from her arms and tucked it between the seat and the saddle. In this state of nudity she rode through camp, from fire to fire, until, at last, attaining the object of her ambition, a soldier's red flannel shirt, she made her adieu in that new costume.

A boy about 12 years of age, of uncommon beauty, was among our visitors. Happy, cheerful and contented, he was consulted in every trade, and seemed an idol with the Apaches. It required little penetration to trace his origin from the same land as the gauze of the old woman. We tried to purchase him, but he said it was *long, long,* since he was captured and that he had no desire to leave his master, who, he was certain, would not sell him for any money. All attempts were vain, and the lad seemed gratified both at the offer to purchase, and the refusal to sell. Here we found the mountains chiefly of red ferruginous sandstone, altered by heat.

lave devotion or fear?

November 4. Six miles from our camp of last night we reached a summit, and then commenced descending again rapidly towards the Gila, along a deeply cañoned valley, the sands of which were black with particles of oxide and peroxide of iron. Near the summit the hills on each side were of old red sandstone, with strata sloping to the southwest at an angle of 25°, and under this were strata of black slate and compact limestone, and then granite.

In the ravines we found, at places, a luxuriant growth of sycamore, ash, cedar, pine, nut-wood, mezcal, and some walnut, the edible nut again, Adam's needle, small evergreen oak and cotton-wood, and a gourd, the cucumis perennis.

There was every indication of water, but none was procured on the surface; it could no doubt have been found by digging.

The last six or eight miles of our route was down the dry bed of a stream, in a course east of south, and our day's journey did not gain much in the direction of California. It was necessary to ascend the river a mile in search of grass, and then we got but an indifferent supply. Except in the two camps nearest to Mount Turnbull, and the one at the San Carlos, we have never before, since leaving Santa Fe, had occasion to complain of the want of grass.

We encamped in a grove of cacti of all kinds; amongst them the huge pitahaya, one of which was fifty feet high.

The geological formation on this slope of the Piñon Lano mountains was: 1st. Conglomerate of sandstone and pebbles; then red sandstone in layers a foot thick; then granite, very coarse. The depth of the two first was many hundred feet, and in some places its stratification much deranged. Many large masses of sandstone, with thin seams of vitrified quartz.

In the dry creek down which we travelled, we saw a cave of green sandstone, in which a fire had been built; for what purpose I cannot conjecture, as it was too small to admit a man.

The Apaches gave us to understand that a marauding party of their people were in Sonora. The broad fresh trail of cattle and horses leading up the arroyo, induces the belief that they have returned—successful, of course.

Last night was mild, the thermometer at 63° above Fahrenheit; and, what was very unusual here, the heavens were overcast, which prevented my getting the rate of the chronometers.

Although we have had no rain except at Mount Graham, where we had a shower which scarcely sufficed to lay the dust, yet the whole face of the country bears marks of rains, and running water, met with in no other part of our journey. The absence of vegetation will, in some measure, account for the deep incisions made by running water in the earth.

November 5. The howitzers did not reach camp last night, yet the grass was so bad, and our beds, on the round pebbles everywhere covering the surface of the ground, so uncomfortable, it was determined to move camp.

The Gila now presents an inhospitable look; the mountains of trap, granite, and red sandstone, in irregular and confused strata, but generally dipping sharply to the south, cluster close together; and one ignorant of the ground could not tell from what direction the river came, or in what direction it flowed onwards to its mouth. The valley, not more than 300 feet from base to base of these perpendicular mountains, is deep, and well grown with willow, cotton-wood, and mezquite.

At several places, perpendicular walls of trap dyke projected from the opposite side of the river, giving the idea that the river waters had once been dammed up, and then liberated by the blow of a giant; for the barrier was shattered—not worn away. In the course of six miles we had crossed and re-crossed the river twice as many times, when we left it by turning abruptly up a dry ravine to the south. This we followed for three miles, and crossed a ridge at the base of Saddle-Back mountain, (so named by us from its resemblance to the outline of a saddle,) and descended by another dry creek to the San Pedro,[91] running nearly north.

The valley of this river is quite wide, and is covered with a dense growth of mezquite, (acacia prosopis,) cotton-wood, and willow, through which it is hard to move without being unhorsed. The whole appearance gave great promise, but a near approach exhibited the San Pedro, an insignificant stream a few yards wide, and only a foot deep.

For six miles we followed the Gila. The pitahaya and every other variety of cactus flourished in great luxuriance. The pitahaya, tall, erect, and columnar in its appearance, grew in every crevice from the base to the top of the mountains, and in one place I saw it growing nearly to its full dimensions from a crevice not much broader than the back of my sabre. These extraordinary looking plants seem to seek the wildest and most unfrequented places.

The range of mountains traversed to-day is the same we have been in for some days, and is a continuation of that of Mount Graham, which turns sharply westward from Turnbull's peak, carrying with it the Gila.

Saddle-Back is an isolated peak of red sandstone that has every appearance of having once formed the table land, and being harder than the surrounding surface, having withstood the abrasion of water.

The uplands were covered as usual with mezquite, chamiza, ephedra, the shrub with the edible nut, and cactus, of which there was a new and beautiful variety. In the cañon we heard in advance of us the crack of a rifle; on coming up we found that old Francisco, one of the guides, had killed a calf, left there, doubtless, by the Apaches.

The dry creek by which we crossed to the San Pedro river was the great highway leading from the mountain fastnesses into the plains of Santa Cruz, Santa Anna, and Tucsoon, frontier towns of Sonora. Along this valley was distinctly marked the same fresh trail, noted yesterday, of horses, cattle, and mules.

The bed of this creek was deeply cut, and turned at sharp angles, forming a zigzag like the bayoux laid by sappers in approaching a fortress, each turn of which (and they were innumerable) formed a strong defensive position. The Apache once in possession of them is secure from pursuit or invasion from the Mexican.

defensive
terrain of
Apache

Since the 1st November, we have been traversing, with incredible labor and great expenditure of mule power, the stronghold of these mountain robbers, having no other object in view than making our distance westward; yet here we are at this camp, only five seconds of time west of camp 89, at Disappointment creek, and one minute and four seconds west of our camp at the mouth of the San Francisco.

Nature has done her utmost to favor a condition of things which has enabled a savage and uncivilized tribe, armed with the bow and lance, to hold as tributary powers three fertile and once flourishing states, Chihuahua, Sonora, and Durango, peopled by a Christian race, countrymen of the immortal Cortez. These states were at one time flourishing, but such has been the devastation and alarm spread by these children of the mountains, that they are now losing population, commerce and manufactures, at a rate, which, if not soon arrested, must leave them uninhabited.

effects savag
of Apache
depredatio

November 6. For the double purpose of allowing the howitzers to come up, and to recruit our mules, it is decided this shall be a day of rest. The grama is good, but sparsely scattered over the hills, and it is necessary to loosen every animal and let them graze at will.

We are yet 500 miles from the nearest settlement, and no one surveying our cavalry at this moment would form notions favorable to the success of the expedition.

Except a few saddle mules,[92] the private property of the officers, which have been allowed to run loose, every animal in camp is covered with patches, scars, and sores, made by the packs in the unequal motion caused by the ascent and descent of steep hills.

The failure of the Apaches to bring in their mules, was a serious disappointment, and entirely justifies the name given to the creek, where they agreed to meet us. Besides, being the only means of transportation, they are, in extremity, to serve us as food, and the poor suffering creatures before us, give no very agreeable impression of the soup which their meat will furnish. However grave the subject may appear, it is the common source of merriment. All seem to anticipate it as a matter of course, and the constant recurrence of the mind to the idea, will no doubt accustom us to it, and make mule as acceptable as other soup.

In the sandy arroyos where our fires burn, that look as if they had been formed but a year or two since, was broken pottery, and the remains of a large building, similar in form, substance and apparent antiquity to those so often described. Strolling over the hills alone, in pursuit of seed and geological specimens my thoughts went back to the States, and when I turned from my momentary aberrations, I was struck most forcibly with the fact that not one object in the whole view, animal, vegetable, or mineral, had any thing in common with the products of any State in the Union, with the single exception of the cotton-wood, which is found in the western States, and seems to grow wherever water flows from the vertebral range of mountains of North America; this tree we found growing near the summit of the Piñon Lano range of mountains; indeed, always where a ravine had its origin.

In one view could be seen clustered, the Larrea Mexicana, varieties of cacti, green wood acacia, chamiza, prosopis odorata, and a new variety of sedge, and then large open spaces of bare gravel.

The only animals seen were lizards, scorpions, and tarantulas.

I made elaborate observations for time and latitude, and for longitude by measurement of lunar distances. Anxious to observe eclipses of Jupiter's satellites, I determined once more to try the small telescope with which the satellites of Jupiter could just be discerned. I strained my eyes for two nights in succession to see if I could discover the moment of immersion and emersion of I and III satellites of Jupiter, which were visible from our camp. My efforts were fruitless, and the result to myself is a distressing nervous affection of the eye; which may injure the correctness of my other observations of this night.

The resulting latitude of the place is 32° 57′ 43″.
longitude " " *7h. 23m. 19s.*

Rate of the chronometer 2075, losing 12″ 7*s*. per day.

The height by barometer 2115 feet above the sea.

The latitude was deduced from 13 circum-meridian altitudes of beta Aquarii, and 12 altitudes of Polaris. The longitude from 8 distances between the alpha Arietis and the moon, 9 of Regulus and the moon and 5 of Aldebaran and the moon.

November 7. About two miles from our camp the San Pedro joins the Gila just as the latter leaps from the mouth of the cañon. The place of meeting is a bottom three miles wide seeming a continuation of that of the Gila.

It is principally of deep dust and sand, over grown with cotton-wood, mezquite, chamiza, willow, and the black willow. In places there are long sweeps of large paving pebbles, filled up with drift wood, giving the appearance of having been overflowed by an impetuous torrent. The hills on both sides of the river, still high, but now farther off, and covered to the top with soil producing the mezquite and pitahaya, as the day advanced, began to draw in closer, and before it closed, had again contracted the valley to a space little more than sufficient for the river to pass; and at halt, after making seventeen miles, we found ourselves encompassed by hills much diminished in height, but not in abruptness. The road, except the deep dust which occasionally gave way and lowered a mule to his knee, was good, that is, there were no hills to scale. The river was crossed and re-crossed four times. At 12 and 14 miles there were good patches of grama, burned quite yellow, but for most of the way, and at our camp, there was little or no grass, and our mules were turned loose to pick what they could of rushes and willow along the margin of the stream.

Wherever the formation was exposed along the river, it was a conglomerate of sandstone, lime and pebbles, with deep caverns.

Nearly opposite our camp of this date, and about one-third the distance up the hill there crops out ore of copper and iron, easily worked, the carbonate of lime and calcareous spar. A continuation of the vein of ore was found on the side where we encamped, and a large knoll strewed with what the Spaniards call "*guia*" the English of which is "guide to gold."

The night has set in dark and stormy; the wind blows in gusts from the southwest, and the rain falling in good earnest, mingled with the rustling noise of the Gila, which has now become swift and impetuous, produces on us, who have so long been accustomed to a tranquil atmosphere, quite the impress of a tempest. We have been so long without rain as to cease to expect or make provision against it, and the consequence is the greatest difficulty in getting the men to provide coverings for the destructible portion of our rations.

tying to
e for mules

Three Indians hailed us just before reaching camp, and after much parley were brought in. They feasted heartily, and promised to bring in mules. At first they denied having any; but after their appetites were satisfied, their hearts opened, and they sent the youngest of their party to their town, which was at the head of the dry creek of our camp, of the night before last. The fellow went on his way as directed, till he met the howitzers, which so filled him with surprise and consternation that he forgot his mission, and followed the guns to camp in mute wonder. These people are of the Piñon Lano (piñon wood) tribe, and we had been told by the Pinoleros (pinole eaters) that the chief of this band had mules.

Flights of geese and myriads of the blue quail were seen, and a flock of turkeys from which we got one.

The river bed, at the junction of the San Pedro, was seamed with tracks of deer and turkey; some "signs" of beaver and one trail of wild hogs.

silver

Our camp was on a flat sandy plain, of small extent, at the mouth of a dry creek, with deep washed banks, giving the appearance of containing at times a rapid and powerful stream, although no water was visible in the bed. At the junction, a clear, pure stream flowed from under the sand. From the many indications of gold and copper ore at this place, I have named it Mineral creek; and I doubt not a few years will see flat-boats descending the river from this point to its mouth, freighted with its precious ores.

There was a great deal of pottery about our camp, and just above us were the supposed remains of a large Indian settlement, differing very slightly from those already described.

November 8. The whole day's journey was through a cañon, and the river was crossed twelve or fifteen times. The sand was deep, and occasionally the trail much obstructed by pebbles of paving-stone. The willow grew so densely in many places as to stop our progress, and oblige us to look for spots less thickly overgrown, through which we could break.

The precipices on each side were steep; the rock was mostly granite and a compact sandy limestone, with occasional seams of basalt and trap; and towards the end of the day, calcareous sandstone, and a conglomerate of sandstone, feldspar, fragments of basalt, pebbles, &c. The stratification was very confused and irregular, sometimes perfectly vertical but mostly dipping to the southwest, at an angle of 30°. Vast boulders of pure quartz at times obstructed our way, and the river, in places, was paved with those of less magnitude.

About two miles from camp, our course was traversed by a seam of yellowish colored igneous rock, shooting up into irregular spires and turrets, one or two thousand feet in height. It ran at right angles to the river, and extended to the north, and to the south, in a chain of mountains as far as the eye could reach. One of these towers was capped with a substance, many hundred feet thick, disposed in horizontal strata of different colors, from deep red to light yellow. Partially disintegrated, and laying at the foot of the spires, was a yellowish calcareous sandstone, altered by fire, in large amorphous masses.

To the west, about a mile below us, and running parallel to the first, is another similar seam, cut through by the Gila, at a great butte, shaped like a house. The top of this butte appears to have once formed the table land, and is still covered with vegetation. Through both these barriers the river has been conducted by some other means than attrition. Where it passes the first, it presents the appearance of a vast wall torn down by blows of a trip hammer. Under to-day's date, in appendix No. 2, will be found many interesting plants, but the principal growth was as usual, pitahaya, Acacia, Prosopis, and Obione canescens.

The latitude of this camp, which is within a mile of the spot where we take a final leave of the mountains, is, by the mean of the observations on north and south stars, Polaris and beta Aquarii, 33° 05′ 40″; its longitude, derived by measurement, and also by chronometric difference of meridian between this and the camp of November 5th, is 111° 13′ 10″ west of Greenwich, and the height of the river at this point above the sea, as indicated by the barometer, 1,751 feet.

At night, for the first time since leaving Pawnee Fork, I was interrupted for a moment in my observations, by moisture collecting on the glass of my horizon shade, showing a degree of humidity in the atmosphere not before existing. In the States there is scarcely a night where the moisture will not collect on the glass exposed to the air, sufficient in two or three minutes to prevent the perfect transmission of light.

November 9. The effect of last night's dampness was felt in the morning, for, although the thermometer was only 37° the cold was more sensible than in the dry regions at 25°.

We started in advance of the command to explore the lower belt of mountains by which we were encompassed. The first thing we noticed in the gorge was a promontory of pitch-stone, against which the river impinged with fearful force, for it was now descending at a rapid rate. Mounting to the top of the rock, on a beautiful table, we found sunk six or eight perfectly symmetrical and well-turned holes, about ten inches deep and six or eight wide at top; near one, in a remote place, was a pitch-stone well turned and fashioned like a pestle. These could be nothing else than the corn-mills of long extinct races. Above this bed of pitch-stone, a butte of calcareous sandstone shot up to a great height, in the seams of which were imbedded beautiful crystals of quartz. Turning the sharp angle of the promontory, we discovered a high perpendicular cliff of calcareous spar and baked argillaceous rock, against which the river also butted, seamed so as to represent distinctly the flames of a volcano. On the side of the river opposite the igneous rocks, the butte rose in perpendicular and confused masses.

This chain continued, not parallel, as I supposed, to the first described barrier, but circled round to the east, and united with it. It also united on the north side, forming a basin three or four miles in diameter, in which we encamped last night. Except a few tufts of Larrea Mexicana, these hills were bare of vegetation. Away off to the south, and bordering on the banks of the river, covering the surface of the ground for one or two feet, was an incrustation of black cellular lava or basalt, like that seen about the Raton. Nothing more was wanted to give the idea of an immense extinct volcano. Through the centre of the crater the Gila now pursues its rapid course.

The Gila at this point, released from its mountain barrier,[93] flows off quietly at the rate of three miles an hour into a wide plain, which extends south almost as far as the eye can reach. Upon this plain mezquite, chamiza, the green acacia, prosopis, artemisia, obione canescens, and pitahaya, were the only vegetation. In one spot only we found a few bunches of grass; more than four-fifths of the plain was destitute of vegetation; the soil, a light brown loose sandy earth, I supposed contained something deleterious to vegetation.

We made our noon halt at the grass patch. At this place were the remains of an immense Indian settlement; pottery was everywhere to be found, but the remains of the foundations of the houses were imbedded in dust. The outlines of the zequias, by which the soil was irrigated, were sometimes quite distinct.

The soil was moist, and wherever the foot pressed the ground the salts of the earth effloresced, and gave it the appearance of being covered with frost. In this way the numberless tracks of horses and other animals, which had at times traversed the plains, were indelible, and could be traced for great distances, by the eye, in long white seams.

We found fresh trails of horses, which might be those of General Castro, or the Indians. When leaving California, Castro's determination, as we learn, was to go to Sonora, beat up recruits, and return. Our route might easily be reached, for we are now marching along a road everywhere accessible, and within three days' march of the settlements of Sonora and the fort at Tucsoon, said to be regularly garrisoned by Mexican soldiers.

We passed the deserted lodges of Indians, and, at one place, remote from the lodges, we saw thirteen poles set up in a sort of incantation formula; twelve on the circumference of a circle, twenty feet in diameter, and one in the centre. Radii were drawn on the ground from the centre pole to each one in the periphery of the circle. It was the figuring of some medicine man of the Apaches or Pimos, we could not tell which, for it was on neutral ground, about the dividing line of the possessions claimed by each.

After leaving the mountains all seemed for a moment to consider the difficulties of our journey at an end. The mules went off at a frolicsome pace, those which were loose contending with each other for precedence in the trail. The howitzers, which had nearly every part of their running gear broken and replaced, were, perhaps, the only things that were benefitted by the change from the mountains to the plains. These were under the charge of Lieutenant Davidson, whose post has been no sinecure. In overcoming one set of difficulties we were now to encounter another. In leaving the mountains we were informed that we bade adieu to grass, and our mules must henceforth subsist on willow, cotton-wood, and the long green ephedra.

November 10. The valley on the southern side of the Gila still grows wider. Away off in that direction, the peaks of the Sonora mountains just peep over the horizon. On the north side of the river, and a few miles from it, runs a low chain of serrated hills. Near our encampment, a corresponding range draws in from the southeast, giving the river a bend to the north. At the base of this chain is a long meadow, reaching for many miles south, in which the Pimos[94] graze their cattle; and along the whole day's march were remains of zequias, pottery, and other evidences of a once densely populated country. About the time of the noon halt, a large pile, which seemed the work of human hands, was seen to the left. It was the remains of a three-story mud house,[95] 60 feet square, pierced for doors and windows. The walls were four feet thick, and formed by layers of mud, two feet thick. Stanly made an elaborate sketch of every part; for it was, no doubt, built by the same race that had once so thickly peopled this territory, and left behind the ruins.

ruins

We made a long and careful search for some specimens of household furniture, or implement of art, but nothing was found except the corn-grinder, always met with among the ruins and on the plains. The marine shell, cut into various ornaments, was also found here, which showed that these people either came from the sea coast or trafficked there. No traces of hewn timber were discovered; on the contrary, the sleepers of the ground floor were round and unhewn. They were burnt out of their seats in the wall to the depth of six inches. The whole interior of the house had been burnt out, and the walls much defaced. What was left bore marks of having been glazed, and on the wall in the north room of the second story were traced the following hieroglyphics. (Lost.)

by Anton

[illegible]

Where we encamped, eight or nine miles from the Pimos village, we met a Maricopo Indian, looking for his cattle. The frank, confident manner in which he approached us was in strange contrast with that of the suspicious Apache. Soon six or eight of the Pimos came in at full speed. Their object was, to ascertain who we were, and what we wanted. They told us the fresh trail we saw up the river was that of their people, sent to watch the movements of their enemies, the Apaches. Being young, they became much alarmed on seeing us, and returned to the town, giving the alarm that a large body of Apaches were approaching.

Their joy was unaffected at seeing we were Americans, and not Apaches. The chief of the guard at once despatched news to his chief, of the result of his reconnoissance. The town was nine miles distant, yet, in three hours, our camp was filled with Pimos loaded with corn, beans, honey, and zandia (water melons.) A brisk trade was at once opened. This was my observing night; but the crowd of Indians was great, and the passing and repassing, at full speed so continuous, that I got an indifferent set of observations.

The camp of my party was pitched on the side nearest the town, and we saw the first of these people and their mode of approach. It was perfectly frank and unsuspicious. Many would leave their packs in our camp and be absent for hours, theft seeming to be unknown among them. With the mounted guard, which first visited us, was a man on foot, and he appeared to keep pace with the fleetest horse. He was a little out of breath when he reached us, but soon recovering, told us he was the interpreter to Juan Antonio Llunas, chief of the Pimos.

We were taking some refreshments at the time, and invited him to taste of them. The effect was electric; it made his bright, intelligent eye flash, and loosened his tongue. I asked him, among other things, the origin of the ruins of which we had seen so many; he said, all he knew, was a tradition amongst them, "that in bygone days, a woman of surpassing beauty resided in a green spot in the mountains near the place where we were encamped. All the men admired, and paid court to her. She received the tributes of their devotion, grain, skins, &c., but gave no love or other favor in return. Her virtue, and her determination to remain unmarried were equally firm. There came a drought which threatened the world with famine. In their distress, people applied to her, and she gave corn from her stock, and the supply seemed to be endless. Her goodness was unbounded. One day, as she was lying asleep with her body exposed, a drop of rain fell on her stomach, which produced conception. A son was the issue, who was the founder of a new race which built all these houses."

tion story

I told the interpreter repeatedly, he must go and report to the general, but his answer was, "let me wait till I blow a little." The attraction was the aquardente. At length he was prevailed on to go to head-quarters, leaving at our camp his bows and arrows and other matters, saying he would return and pass the night with us.

November 11. Leaving the column, a few of us struck to the north side of the river, guided by my loquacious friend, the interpreter, to visit the ruins of another Casa Montezuma. In the course of the ride, I asked him if he believed the fable he had related to me last night, which assigned an origin to these buildings. "No," said he, "but most of the Pimos do. We know, in truth, nothing of their origin. It is all enveloped in mystery."

The casa was in complete ruins, one pile of broken pottery and foundation stone, of the black basalt, making a mound about ten feet above the ground. The outline of the ground plan was distinct enough.

We found the description of pottery the same as ever; and among the ruins, the same sea shell; one worked into ornaments; also a large bead, an inch and a quarter in length, of bluish marble, exquisitely turned.

We secured to-day our long sought bird,[96] the inhabitant of the mezquite, indigo blue plumage, with top knot and long tail. Its wings, when spread, showing a white ellipse.

Turning from the ruins towards the Pimos village, we urged our guide to go fast, as we wished to see as much of his people as the day would permit. He was on foot, but led at a pace which kept our mules in a trot.

We came in at the back of the settlement of Pimos Indians, and found our troops encamped in a corn field, from which the grain had been gathered. We were at once impressed with the beauty, order, and disposition of the arrangements for irrigating and draining the land. Corn, wheat, and cotton are the crops of this peaceful and intelligent race of people. All the crops have been gathered in, and the stubbles show they have been luxuriant. The cotton has been picked, and stacked for drying on the tops of sheds. The fields are sub-divided, by ridges of earth, into rectangles of about 200 x 100 feet for the convenience of irrigating. The fences are of sticks, wattled with willow and mezquite, and in this particular, set an example of economy in agriculture worthy to be followed by the Mexicans, who never use fences at all. The houses of the people are mere sheds, thatched with willow and corn stalks.

With the exception of the chief, Antonio Llunas, who was clad in cast off Mexican toggery, the dress of the men consisted of a cotton serape of domestic manufacture, and a breech cloth. Their hair was very long, and clubbed up. The women wore nothing but the serape pinned about the loins, after the fashion of Persico's Indian woman on the east side of the Capitol, though not quite so low.

The camp was soon filled with men, women, and children, each with a basket of corn, frijolés, or meal, for traffic. Many had jars of the molasses expressed from the fruit of the Cereus Giganteus. Beads, red cloth, white domestic, and blankets, were the articles demanded in exchange. Major Swords, who had charge of the trading duty, pitched a temporary awning, under which to conduct the business, which had scarcely commenced before this place formed a perfect menagerie, into which crowded, with eager eyes, Pimos, Maricopas, Mexicans, French, Dutch, English, and Americans. As I passed on to take a peep at the scene, naked arms, hands and legs protruded from the awning. Inside there was no room for bodies, but many heads had clustered into a very small space, filled with different tongues and nations. The trade went merrily on, and the conclusion of each bargain was announced by a grunt and a joke, sometimes at the expense of the quartermaster, but oftener at that of the Pimos.

November 12. We procured a sufficiency of corn, wheat, and beans from the Pimos, but only two or three bullocks, and neither horses nor mules. They have but few cattle, which are used in tillage, and apparently all steers, procured from the Mexicans. Their horses and mules were not plenty, and those they possessed were prized extravagantly high. One dashing young fellow, with ivory teeth and flowing hair, was seen coming into our camp at full speed, on a wild unruly horse, that flew from side to side as he approached, alarmed at the novel apparition of our people. The Maricopa, for he was of that tribe, was without saddle or stirrups, and balanced himself to the right and left with such ease and grace as to appear part of his horse. He succeeded in bringing his fiery nag into the heart of the camp. He was immediately offered a very advantageous trade by some young officer. He stretched himself on his horse's neck, caressed it tenderly, at the same time shutting his eyes, meaning thereby that no offer could tempt him to part with his charger.

The general gave a letter to Governor Llunas, stating he was a good man, and directing all United States troops that might pass in his rear to respect his excellency, his people, and their property. Several broken down mules were left with him to recruit, for the benefit of Cooke's battalion[97] as it passed along.

diction!

To us it was a rare sight to be thrown in the midst of a large nation of what is termed wild Indians, surpassing many of the Christian nations in agriculture, little behind them in the useful arts, and immeasurably before them in honesty and virtue. During the whole of yesterday, our camp was full of men, women, and children, who sauntered amongst our packs, unwatched, and not a single instance of theft was reported.

I rode leisurely in the rear, through the thatched huts of the Pimos; each adobe consists of a dome-shaped wicker-work, about six feet high, and from twenty to fifty feet in diameter, thatched with straw or corn stalks. In front is usually a large arbor, on top of which is piled the cotton in the pod, for drying.

In the houses were stored water melons, pumpkins, beans, corn, and wheat, the three last articles generally in large baskets; sometimes the corn was in baskets covered with earth, and placed on the tops of the domes. A few chickens and dogs were seen, but no other domestic animals, except horses, mules, and oxen. Their implements of husbandry were the axe (of steel,) wooden hoes, shovels, and harrows. The soil is so easily pulverized as to make the plough unnecessary.

Several acquaintances, formed in our camp yesterday, were recognized, and they received me cordially, made signs to dismount, and when I did so, offered water melons and pinole. Pinole is the heart of Indian corn, baked, ground up, and mixed with sugar. When dissolved in water, it affords a delicious beverage; it quenches thirst, and is very nutritious. Their molasses, put up in large jars, hermetically sealed, of which they had quantities, is expressed from the fruit of the Cereus Giganteus.

A woman was seated on the ground under the shade of one of the cotton sheds. Her left leg was tucked under her seat and her foot turned sole upwards; between her big toe and the next, was a spindle about 18 inches long, with a single fly of four or six inches. Ever and anon she gave it a twist in a dexterous manner, and at its end was drawn a coarse cotton thread. This was their spinning jenny. Led on by this primitive display, I asked for their loom by pointing to the thread and then to the blanket girded about the woman's loins. A fellow stretched in the dust, sunning himself, rose up leisurely and untied a bundle which I had supposed to be a bow and arrow. This little package, with four stakes in the ground, was the loom. He stretched his cloth and commenced the process of weaving.

We travelled 15½ miles and encamped on the dividing ground between the Pimos and Maricopas. For the whole distance, we passed through cultivated grounds, over a luxuriantly rich soil. The plain appeared to extend in every direction 15 or 20 miles, except in one place about five miles before reaching camp, where a low chain of hills comes in from the southeast, and terminates some miles from the river. The bed of the Gila, opposite the village, is said to be dry; the whole water being drawn off by the zequias of the Pimos for irrigation; but the ditches are larger than is necessary for this purpose, and the water which is not used returns to the bed of the river with little apparent diminution in its volume.

Looking from our camp north, 30° west, you see a great plain with mountains rising in the distance on each side. This prospect has induced some travellers to venture from here in a direct line to Monterey in California, but there is neither grass nor water on that passage, and thirst and distress overcame, undoubtedly, those who attempted it.

In almost an opposite direction north, 50° east, there is a gap in the mountains through which the Salt river flows to meet the Gila, making with it an acute angle, at a point ten or fifteen miles distant from our camp, bearing northwest. A little north of east, another gap, twenty or thirty miles distant, shows where the Rio San Francisco[98] flows into the Salt river. From the best information I can collect, the San Francisco comes in from the north; its valley is narrow and much cañoned; good grass abounds all the way. Le Voncoeur, one of my party, came down that river in 1844 with a trapping party of forty-eight men. He states that they were much annoyed the whole way by the Apache Indians, a great many of whom reside on that river. Every night they were fired upon, and an attempt made to stampede their mules. Many traps were stolen, and one of their party, an old man, who had been in the mountains forty-five years, was killed by the Indians in this expedition.

Near the junction of the Gila and Salt rivers, there is a chain of low serrated hills coming in from both sides, contracting the valley considerably. Around the South Spur the Gila turns, making its course in a more southerly direction. To the east, except where the spurs already mentioned protrude, the plain extends as far as the eye can reach. A great deal of the land is cultivated, but there is still a vast portion within the level of the Gila that is yet to be put under tillage. The population of the Pimos and Maricopas together is estimated variously at from three to ten thousand. The first is evidently too low.

This peaceful and industrious race are in possession of a beautiful and fertile basin. Living remote from the civilized world, they are seldom visited by whites, and then only by those in distress, to whom they generously furnish horses and food. Aguardiente (brandy) is known among their chief men only, and the abuse of this, and the vices which it entails, are yet unknown.

They are without other religion than a belief in one great and over-ruling spirit.

Their peaceful disposition is not the result of incapacity for war, for they are at all times enabled to meet and vanquish the Apaches in battle, and when we passed, they had just returned from an expedition in the Apache country to revenge some thefts and other outrages, with eleven scalps and thirteen prisoners. The prisoners are sold as slaves to the Mexicans.

The Maricopas occupy that part of the basin lying between camp 97 and the mouth of the Salt River, and all that has been said of the Pimos, is applicable to them. They live in cordial amity, and their habits, agriculture, religion, and manufactures, are the same. In stature, they are taller; their noses are more aquiline, and they have a much readier manner of speaking and acting. I noticed that most of the interpreters of the Pimos were of this tribe, and also the men we met with in the spy guard. Though fewer in number, they appear to be superior in intelligence and personal appearance.

Don Jose Messio is their governor, and, like the governor of the Pimos, holds his office by the appointment of the Mexican governor of California. The people have no choice in the selection. Both these Indians are respectable looking old men, and seem to be really worthy of the trust reposed in them.

We had not been long in camp before a dense column of dust down the river announced the approach of the Maricopas, some on foot, but mostly on horseback. They came into camp at full speed, unarmed, and in the most confident manner, bringing water melons, meal, pinole, and salt for trade. The salt is taken from the plains; wherever there are bottoms which have no natural drainage, the salt effloresces and is skimmed from the surface of the earth. It was brought to us both in the crystallized form, and in the form when first collected, mixed with earth.

My camp was selected on the side towards the village, and the constant galloping of horses rendered it difficult for me to take satisfactory observations, which I was desirous of doing, as it is an important station. When I placed my horizon on the ground, I found that the galloping of a horse five hundred yards off affected the mercury, and prevented a perfectly reflected image of the stars, and it was in vain to hope for these restless Maricopas to keep quiet. News got about of my dealings with the stars, and my camp was crowded the whole time.

The latitude of this camp by such observations as the Maricopas would allow me to make, was 33° 09′ 28″, and the longitude 112° 07′ 13″.

November 13 and 14. With the morning came the Maricopas women, dressed like the Pimos. They are somewhat taller, and one peculiarity struck me forcibly, that while the men had aquiline noses, those of the women were *retroussés*. Finding the trade in meal had ceased, they collected in squads about the different fires, and made the air ring with their jokes and merry peals of laughter. Mr. Bestor's spectacles were a great source of merriment. Some of them formed the idea that with their aid, he could see through their cotton blankets. They would shrink and hide behind each other at his approach. At length, I placed the spectacles on the nose of an old woman, who became acquainted with their use and explained it to the others.

We were notified that a long journey was to be made without finding water, (to cut off an elbow in the river,)[99] and the demand for gourds was much greater than the supply. One large gourd cost me four strings of glass beads, which was thought a high price. The interpreter who guided us to the Casa Montezuma, on the north side of the Gila, said that on the Salt river, about a day's journey and a half, there was one of those buildings[100] standing, complete in all respects except the floors and roof. He said it was very large, with beautiful glazed wall; that the footsteps of the men employed in building the house could yet be seen in the adobe, and that the impression was that of a naked foot. Whenever a rain comes, the Indians resort to these old houses to look for trinkets of shells, and a peculiar green stone which I think is nothing more than verde antique.

At 12 o'clock, after giving our horses a last watering, we started off in a southwestern direction to turn the southern foot of the range of hills pointing to the Salt River. Five miles brought us into a grove of the Cereus, which had yielded a plentiful supply of fruit to the Indians. Our way was over a plain of granitic sand ascending gradually and almost imperceptibly. After leaving the Cereus, there was no growth except the Larrea Mexicana, and occasionally, at long intervals, an acacia or inga.[101]

We travelled till long after dark, and dropped down in a dust hole near two large green-barked acacias. There was not a sprig of grass or a drop of water, and during the whole night the mules kept up a piteous cry for both.

There was nothing but the offensive Larrea, which even mules will not touch when so hungry as to eat with avidity the dry twigs of all other shrubs and trees. As soon as the moon rose, at 3, a. m., the bugle sounded to horse, and we were up and pursuing our way. A little after sunrise, we had passed the summit and were descending towards the Gila. This summit was formed by a range of granite hills running southeast, and standing in pinnacles.

As the sun mounted, the mirage[102] only seen once before since leaving the plains of Arkansas, now began to distort the distant mountains, which everywhere bounded the horizon into many fantastic shapes. The morning was sharp and bracing, and I was excessively hungry, having given my breakfast, consisting of two biscuits to my still more hungry mule. I was describing to Mr. Warner how much more pleasant it would be to be jogging into Washington after a fox hunt, with the prospect of a hot breakfast, when up rose to our astonished view, on the north side of the Gila, a perfect representation of the capitol, with dome, wings, and portico, all complete. It remained for full twenty minutes with its proportions and outline perfect, when it dwindled down into a distant butte.

We went on briskly to the Gila, whose course, marked by the green cotton-wood, could be easily traced. It looked much nearer than it really was. We reached it after making forty miles from our camp of yesterday.

Our poor brutes were so hungry they would drink no water, but fell to work on the young willows and cane. After letting them bite a few minutes we moved down the river five miles further, to a large and luxuriant patch of paspalum grass, shaded by the acacia and prosopis.

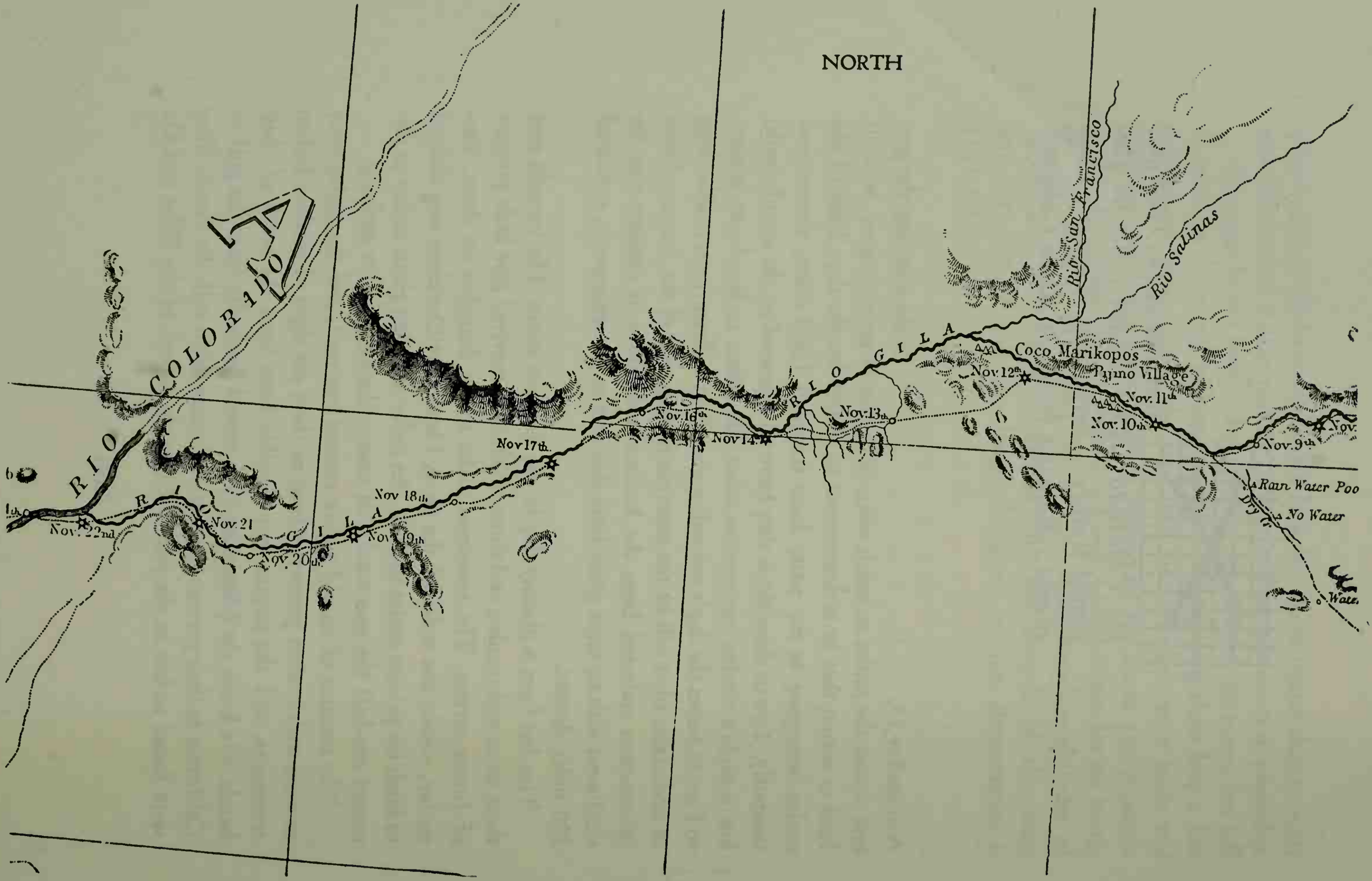
My eyes becoming sore with dust, I took a large object for my southern star tonight, the planet Saturn. 16 circum-meridian altitudes of Saturn and 9 altitudes of Polaris give the latitude of the camp 35° 59′ 22″,[103] and the longitude given by the chronometer is 112° 50′ 01″.

Junction of the Gila and the Colorado...The Desert...Across Imperial Valley...Arrival at Warner's Rancheria...Bathing Pools at Aqua Caliente.

November 15. In the morning the general found the mules so much worsted by the 45 miles journey, without food or water, that he is determined to remain for the day. Most of the mules belonging to my party have travelled 1,800 miles, almost continuously. Two or three times they have all appeared on the eve of death; but a mule's vitality recuperates when life seems to be almost extinct, so I am in hopes the day's rest will revive them sufficiently to enable them to undertake what will be the most distressing part of the journey. From information collected from the Indians and others, it appears that we shall meet with no more grass from this spot to the settlements, estimated 300 miles distant.

This has been a gloomy day in the dragoon camp. The jornada cost them six or eight mules, and those which have survived give little promise of future service. The howitzers make severe draughts on them. Yesterday, within five miles of the river, Lieutenant Davidson was obliged to hitch his private mules to them. An order has been given to-day to dismount one-half the command and reserve the animals for packing.

The remains of an old zequia crossed our trail, and the plains were covered with broken pottery. About us there are signs of modern Indian tenements, and the zequia may possibly have been the work of their hands. We know the Maricopas have moved gradually from the gulf of California to their present location, in juxtaposition with the Pimos. They were found so late as the year 1826, at the mouth of the Gila; and Dr.


NORTH
Rio San Francisco
Rio Salinas
RIO COLORADO
RIO GILA
Coco Marikopos
Pijmo Village
Nov. 9th
Nov. 10th
Nov. 11th
Nov. 12th
Nov. 13th
Nov 14th
Nov. 16th
Nov 17th.
Nov 18th
Nov 19th
Nov. 20th
Nov. 21
Nov. 22nd
Rain Water Poo
Dry
No Water
Water

November 8th to November 22nd.

Anderson, who passed from Sonora to California in 1828, found them, as near as we could reckon from his notes, about the place we are now encamped in. The shells found to-day were, in my opinion, evidently brought by the Maricopas from the sea. They differ from those we found among the ruins.

Observed for time to-night and obtained the rates of my chronometers; that of chronometer No. 783, 12s. per day, showing a very satisfactory consistency in rate since leaving the mountains.

November 16. The valley on the south side continues wide, and shows continuously the marks of former cultivation. On the north side the hills run close to the river.

After making ten miles we came to a dry creek, coming from a plain reaching far to the south, and then we mounted the table lands to avoid a bend in the river, made by a low chain of black hills coming in from the southeast. The table land was strewed with fragments of black basalt, interspersed with agate, chalcedony, vitrified quartz, and carbonate of lime. About the summit was a mound of granite boulders, blackened by augite, and covered with unknown characters; the work of human hands. These have been copied. On the ground near by were also traces of some of the figures, showing some of the hieroglyphics, at least, to have been the work of modern Indians. Others were of undoubted antiquity, and the signs and symbols intended, doubtless, to commemorate some great event. One stone bore on it what might be taken, with a little stretch of the imagination, to be a mastodon, a horse, a dog, and a man. Their heads are turned to the east, and this may commemorate the passage of the aborigines of the Gila on their way south.

Many of the modern symbols are in imitation of the antique, and, doubtless, the medicine men of the present day resort to this mound to invoke their unseen spirits, and work the miracles which enable them to hold their sway amongst their credulous race. There are many more weird and mysterious-looking places than this to be found along the banks of the Gila, and the first attraction to the modern Indians was, without doubt, the strange characters he saw described.

Some of the boulders appear to have been written and re-written upon so often it was impossible to get a distinct outline of any of the characters.

We descended into the broad valley of the Gila, skirted on the south side of the table land, black with basalt pebbles, resting on a stratum of the carbonate of lime upon which the river impinged at every flood, and widened its valley.

The hills on the north side were of red and grey rocks, probably granite, irregular in form, varying from 500 to 1,000 feet. Finding no grass, we loosened our mules among the willows and cane.[104]

November 17. The route to-day was over a country much the same as that described yesterday. Wherever we mounted to the table lands to cut off a bend in the river, found them dreary beyond description, covered with blocks of basalt, with a few intervals of dwarf growth of Larrea. Now and then a single acacia raised its solitary form and displayed its verdure in the black expanse. We crossed the dry beds of two creeks with sandy bottoms. Under the crust of basalt are usually sandstone and a conglomerate of pebbles, sandstone, and lime. This last is easily undermined by the river, and the basalt or lava then caves in.

The bottoms of the river are wide, rich, and thickly overgrown with willow and a tall aromatic weed, and alive with flights of white brant,[105] (wing tipped with black,) geese, and ducks, with many signs of deer and beaver.

At night I heard the song of the sailors calling the depth of the water, and presently, Williams, Lieutenant Warner's servant, who had been missing all day, came out of the river with the hind quarters of a large buck, perfectly intoxicated with his unexpected success. Twelve miles back, he let his mule loose, went in pursuit of deer, and killed a buck. After lugging the whole of it for two miles, he lightened his load by leaving one-half.

We encamped down in one of the deserted beds of the Gila, where the ground was cracked and drawn into blisters. The night was cold, the thermometer at 6, a. m., 20°.

Latitude of the camp 32° 55′ 52″. Longitude of the camp 113° 25′ 25″.

November 18. High wind from the northwest all day, showing that there was still a barrier of snow-clad mountains between ourselves and Monterey,[106] which we must turn or scale.

Carson pointed to a flat rock covered with fir, and told that he had slaughtered a fat mule there. The names of several Americans were inscribed on the same rock.

Inscription Rock?

After travelling some ten or twelve miles through the valley, we mounted to the table land, and at 12½ o'clock stopped to graze our horses at a little patch of dried spear grass. Leaving this, the ground as far as the eye could reach, was strewed with the black, shining, well rounded pebbles. The Larrea even was scarcely seen, and dreariness seemed to mantle the earth. The arroyo by which we descended to the river was cut from a bed of reddish pebbles 20 or 30 feet deep, and as we neared the river they were soldered together in a conglomerate of which lime was the cement.

We saw to-day on the rocks, other rude carvings of the Indians, but their modern date was apparent.

To-day there was a dead calm, about meridian intensely hot, and the dust rose in volumes as our party advanced.

We found the river spread over a greater surface, about 100 yards wide, and flowing gently along over a sandy bottom, the banks fringed with cane, willow, and myrtle.[107]

Last night I took an involuntary plunge into it, for my mule sunk in a quick sand, while I was searching for a place to cross my party. To-night I took a swim, but found the waters disagreeably cold.

The chain of broken hills still continued on the north side, and when near our camp of this date, circled in an amphitheatre, with its arch to the north. The basaltic columns, rising into the shape of spires, domes, and towers, gave it the appearance, as we approached, of a vast city on on the hills. The distance of the crown of this amphitheatre, determined by angulation, is —— miles, and Francisco informs me, that against its north base the Colorado strikes. So at this point, which is about six miles below our camp of this date, the Gila and Colorado must be near together. The hills and mountains appeared entirely destitute of vegetation, and on the plains could be seen, only at long intervals, a few stunted tufts of Larrea Mexicana, and wild wormwood, artemisia cana.

November 19. The table lands were the same as those described yesterday, but the valley widens gradually, and for most of the way is six or eight miles wide, and the soil excellent. Some remains of former settlements in broken pottery, corn grinders, &c.; but much fewer in number than above. Nine miles from camp a spur of mountains of an altered silicious sandstone came in from the southeast, sharp as the edge of a case knife, and shooting into pinnacles. At their base we passed for half a mile over the sharp edges of a red altered sandstone, dipping southwest about 80°, indeed nearly vertical.

On this spur was killed a mountain sheep, one of a large flock, from which we named it Goat's spur.[108] We encamped on an island where the valley is contracted by sand buttes in what had been very recently the bed of the river. It was overgrown with willow, cane, Gila grass, flag grass, &c. The pools in the old bed of the river were full of ducks, and all night the swan, brant, and geese, were passing, but they were as shy as if they had received their tuition on the Chesapeake bay, where they are continually chased by sportsmen. The whole island was tremulous with the motion of the mules grazing, and my observations were, therefore, not very satisfactory.

11 circum-meridian altitudes of Procyon, and 12 altitudes of Polaris, give the latitude of the camp, 32° 43′ 38″.

November 20. The table lands were of sand, and the bottom of the river constantly received deposits from them, which changed its bed frequently, as might be seen from the different growths of cotton-wood marking the old land. Our road, about five miles from last night's camp, was traversed by a spur of coarse grained granite underlaid by old red sandstone dipping some 80° to the south and west.

The direction of the spur was nearly parallel to those before noted, northwest and southeast, which is the direction of the axis of the maximum elevation of most of the mountains traversing the course of the Gila.

Our camp was pitched on a little patch of grass two miles from the river; night came on before the horses reached it, and they were without water for twenty-four hours; there was a pond near the camp, but so salt that the horses could not drink it.

At noon, the thermometer was 74°, at 6, p. m., 52°, and at 6 o'clock the next morning, 19°, which has been about the average range of temperature for the last two weeks.

November 21. To-day we marched only eight and a half miles, and halted for a patch of grama, which was an agreeable and beneficial change to our mules, which had been living on cane and willow for some days past.

The plains are now almost entirely of sand, and composed of sandy and calcareous loam with iron pyrites and common salt, covered sparsely with chamiza, Larrea Mexicana, and a shrubby species of sage.

I observed at night for latitude and time, and there being two occultations of Jupiter's satellites, I was tempted to observe them with our inferior telescope, which only gave us another proof of its uselessness for the purpose.

November 22. Mr. Warner and I started before the advance sounded, and climbed the sharp spur of a continuous comb of mountains coming from the southeast, to try if we could see the Colorado of the west. The mountains rose abruptly from the plains[109] as they mostly do in this region, resembling in appearance large dykes terminating at top in a sharp ridge which a man could, at any part, straddle. They were of hard granite, pepper and salt colored, traversed by seams of white quartz. This spur gives the river Gila quite a bend to the north, and from that point to its mouth, which we reached at night, the river is straight in its general direction; but its course is crooked and dotted with sandbars, by incursions from the sandhills which now flank both its sides. The sand is brought down by the winds from the valley of the Colorado. Its volume seemed, I think, a little diminished, probably absorbed by the sand.

The day was warm, the dust oppressive, and the march, twenty-two miles, very long for our jaded and ill-fed brutes. The general's horse gave out, and he was obliged to mount his mule.

Most of the men were on foot, and a small party, composed chiefly of the general and staff, were a long way ahead of the straggling column, when, as we approached the end of our day's journey, every man was straightened in his saddle by our suddenly falling on a camp which, from the trail, we estimated at 1,000 men who must have left that morning. Speculation was rife, but we all soon settled down to the opinion that it was General Castro[110] and his troops; that he had succeeded in recruiting an army in Sonora, and was now on his return to California. Carson expressed the belief that he must be only ten miles below, at the crossing. Our force consisted only of 110 men. The general decided we were too few to be attacked, and must be the aggressive party, and if Castro's camp could be found, that he would attack it the moment night set in, and beat them before it was light enough to discover our force.

american [illegible]

The position of our camp was decided, as usual, with reference to the grass. The lives of our animals were nearly as important as our own. It was pitched to-day in a little hollow encircled by a chain of sand hills, overgrown with mezquite.

The sergeant of the general's guard was behind, his mule having broken down; and when he came in reported having seen two Indians about five miles back. For a short time we supposed this immense trail was a band of Indians returning from a successful marauding expedition in Sonora or California; but this conjecture was soon dispelled by the appearance of a mounted Mexican on a sand butte overlooking our camp, who, after taking a deliberate survey, disappeared. The camp was arranged immediately for defence, and a cordon of sentinels stationed on the sand hills.

The two howitzers did not arrive till nine o'clock, and the officer in charge, Lieutenant Hammond, reported he had seen large fires to the right, apparently five miles distant, on the opposite side of the Gila.

The general said it was necessary for him to know who occupied the camp, its force, character, and destination.

He ordered me to take my party and fifteen dragoons, for the purpose of reconnoitring. After beating about in the mezquite for some time, we struck a slough of the Gila, where grew some tall willows. Up one of these I sent a dragoon, who saw no fire, but whose ears were gladdened by the neighing of horses. He slipped down the tree much faster than he climbed it, quite enchanted with the hope of exchanging his weary mule for a charger. Instead of reporting what he had seen, he exclaimed, "Yes, sir, there are enough for us all." "Did you see the fires?" "No! but they are all on horses; I heard them neighing, and they cover much ground." He pointed in the direction, and after proceeding a short distance, we all heard distinctly the noise of the horses, indicating a large number.

Silence was enjoined, and we proceeded stealthily along for some time, when a bright fire blazed before us. I halted the guard, and with two dragoons, Londeau and Martinez, proceeded unobserved until within a few feet of the fire. Before it stood an armed Mexican. I sent Londeau and Martinez with orders to assume the occupation of trappers, and ascertain whom, and what, the man guarded. The conference was short; other Mexicans advanced, and I sent in man for man. It was not Castro as we expected, but a party of Mexicans with 500 horses from California, on their way to Sonora for the benefit of Castro.

I took the four principal men to the general, and left a guard to watch the camp and see that no attempt was made to escape. The men were examined separately, and each gave a different account of the ownership and destination of the horses.

The chief of the party, a tall venerable looking man, represented himself to be a poor employé of several rich men engaged in supplying the Sonora market with horses. We subsequently learned that he was no less a personage than Jose Maria Leguna, a colonel in the Mexican service.

November 23. We did not move camp to-day, in order to make a refit from last night's capture, and give our mules an opportunity to pick what little grass they could before taking the desert of 90 miles, which lies on the other side of the Colorado, and between us and water.

Warner, Stanly, and myself, saddled up to visit the junction of the Gila and Colorado, which we found due north from our camp, and about a mile and a half distant. The day was stormy, the wind blowing fiercely from the north. We mounted a butte of feldspathic granite, and, looking 25° east of north, the course of the Colorado was tracked by clouds of flying sand. The Gila comes into it nearly at right angles, and the point of junction, strangely chosen, is the hard butte through which, with their united forces they cut a cañon, and then flow off due magnetic west, in a direction the resultant due to the relative strength of the rivers.

The walls of the cañon are vertical and about 50 feet high, and 1,000 feet long. Almost before entering the cañon, in descending the Gila, its sea-green waters are lost in the chrome colored hue of the Colorado. For a distance of three or four miles below the junction, the river is perfectly straight, and about 600 feet wide; and up at least to this point, there is little doubt that the Colorado is always navigable for steamboats. Above, the Colorado is full of shifting sandbars, but is, no doubt, to a great extent susceptible of navigation.

The Gila, at certain stages, might be navigated up to the Pimos village, and possibly with small flat boats at all stages of water.

r,
o's Church

Near the junction, on the north side, are the remains of an old Spanish church,[111] built the near the beginning of the 17th century, by the renowned missionary, Father Kino. The mission was eventually sacked by the Indians, and the inhabitants all murdered or driven off. It will probably yet be the seat of a city of wealth and importance, most of the mineral and fur regions of a vast extent of country being drained by the two rivers. The stone butte through which they have cut their passage is not more than a mile in length. The Gila once flowed to the south, and the Colorado to the north of this butte, and the point of junction was below. What freak of nature united their efforts in forcing the butte, is difficult to say. During freshets, it is probable the rivers now discharge their surplus waters through these old channels. Francisco informs me that the Colorado, seven days' travel up from the butte, continues pretty much as we saw it.

There a cañon is reached, impassible for horses or canoes. The country between is settled by the Coyotaros,[112] or wolf-eaters, cochinears, dirty fellows, Tontears, or fools, and the Garroteros, or club Indians. These cultivate melons, beans and maize.

On our return we met a Mexican, well mounted and muffled in his blanket. I asked him where he was going; he said to hunt horses. As he passed, I observed in each of his holsters the neck of a bottle, and on his croup a fresh made sack, with other evidences of a preparation for a journey. Much against his taste, I invited him to follow me to camp; several times he begged me to let him go for a moment, that he would soon return. His anxiety to be released increased my determination not to comply with his request. I took him to General Kearny and explained to him the suspicious circumstances under which I had taken him, and that his capture would prove of some importance. He was immediately searched, and in his wallet was found the mail from California, which was of course opened.

Among the letters was one addressed to General Jose Castro, at Alta,[113] one to Antonio Castro, and others to men of note in Sonora. All suspected of relating to public affairs were read, and we ascertained from them that a counter revolution[114] had taken place in California, that the Americans were expelled from Santa Barbara, Puebla de los Angeles, and other places; and that Robideaux, the brother of our interpreter, who had been appointed alcalde by the Americans, was a prisoner in jail. They all spoke exultingly of having thrown off "the detestable Anglo-Yankee yoke," and congratulated themselves that the tri-color once more floated in California.

counter rev. ag. americans in C

Captain Flores[115] was named as the general and governor, pro tem., and the enthusiasm of the people described as overflowing in the cause of emancipation from the Yankee yoke. One letter gave a minute and detailed account of a victory stated to have been obtained over the Americans. It stated that 450 men landed at San Pedro, and were met, defeated, and driven back to the fort at San Pedro. This last was attributed by us to Mexican braggadocio, as it is usual with them to represent their defeats as victories; but that there was a disturbance of a serious kind in the province, we could not doubt, from the uniformity of the accounts on that head. We also learned that the horses captured were in part for General Castro. Nothing more was wanting to legitimize our capture, and Captain Moore was directed to remount his men.

The letters contained precise information, but being dated so far back as the 15th October, left us in great doubt as to the real state of affairs in California, and the Mexicans played their parts so dexterously, it was not in our power to extract the truth from them. One of the party, who had received some little favor from Carson in California, was well plied with brandy, but all that could be extorted from him was the advice that we should not think of going to the Puebla[116] with our small force, counsel that our friend soon learned we had not the slightest intention of following.

The position of our camp, about one mile and a half south of the junction of the Colorado and Gila rivers, determined by 12 circum-meridian altitudes of Sirius, 6 of Saturn, and 12 altitudes of Polaris, is latitude 32° 42′ 09″. The longitude by one set of lunar distances, E. and W., 114° 37′ 09″, which agrees with the chronometric determination of the same place, determined by assuming the longitude of San Diego to be 117° 11′.

The clouds, together with my military duties, interfered with taking a more elaborate set of lunar distances. An inspection of the individual observations for latitude will show that the latitude of the camp may be relied on, but I regret it was not in my power to measure the exact distance of our camp from the mouth of the Gila.

At night, passing my arm over the surface of the fur robe in which I was enveloped, electric sparks were discharged in such quantities as to make a very luminous appearance, and a noise like the rattle of a snake.

November 24 We visited the camp of our Mexican friends, whom the general determined to release, and found there was a woman with the party in the agonies of childbirth. She was at once furnished from our stores with all the comforts we possessed. This poor creature had been dragged along, in her delicate situation, over a fearful desert.

The captured horses were all wild and but little adapted for immediate service, but there was rare sport in catching them, and we saw for the first time the lazo[117] thrown with inimitable skill. It is a saying in Chihuahua that "a Californian can throw the lazo as well with his foot as a Mexican can with his hand," and the scene before us gave us an idea of its truth. There was a wild stallion of great beauty which defied the fleetest horse and the most expert rider. At length a boy of fourteen, a Californian, whose graceful riding was the constant subject of admiration, piqued by repeated failures, mounted a fresh horse, and, followed by an Indian, launched fiercely at the stallion.

His lariat darted from his hand with the force and precision of a rifle ball, and rested on the neck of the fugitive; the Indian, at the same moment, made a successful throw, but the stallion was too stout for both, and dashed off at full speed, with both ropes flying in the air like wings. The perfect representation of Pegasus, he took a sweep, and followed by his pursuers, came thundering down the dry bed of the river. The lazos were now trailing on the ground, and the gallant young Spaniard, taking advantage of the circumstance, stooped from his flying horse and caught one in his hand. It was the work of a moment to make it fast to the pommel of his saddle, and by a short turn of his own horse, he threw the stallion a complete somerset, and the game was secure.

We travelled over a sandy plain a few miles, and descended into the wide bed of the Colorado, overgrown thickly with mezquite, willow, and cotton-wood; after making about ten miles, we encamped abreast of the ford on a plateau covered with young willows, of which our horses were to lay in a sufficient supply to last them over the desert. Since writing the above, we have found a good patch of grass, and our people have been ordered to cut a ration for each mule to carry along.

The night was excessively cold and damp, and in the morning our blankets were covered with a little dew. For the first time, the bugle calls were distinctly reverberated, showing the atmospheric change as we approach the coast and descend into the neighborhood of the sea level. In New Mexico, even when surrounded by hills and perpendicular walls, the report of fire arms, and the sound of the bugle, were unattended by any distinct echo. The reports were sharp and unpleasant, not rounded, as here, by the reverberation.

The country, from the Arkansas to this point, more than 1,200 miles, in its adaptation to agriculture, has peculiarities which must forever stamp itself upon the population which inhabits it. All of North Mexico,[118] embracing New Mexico, Chihuahua, Sonora, and the Californias, as far north as the Sacramento, are, as far as the best information goes, the same in the physical character of its surface, and differ but little in climate or products.

In no part of this vast tract can the rains from Heaven be relied upon, to any extent, for the cultivation of the soil. The earth is destitute of trees, and in great part also of any vegetation whatever.

A few feeble streams flow in different directions from the great mountains, which in many places traverse this region. These streams are separated, sometimes by plains, and sometimes by mountains, without water and without vegetation, and may be called deserts, so far as they perform any useful part in the sustenance of animal life.

The cultivation of the earth is therefore confined to those narrow strips of land which are within the level of the waters of the streams, and wherever practised in a community with any success, or to any extent, involves a degree of subordination, and absolute obedience to a chief, repugnant to the habits of our people.

The chief who directs the time and the quantity of the precious irrigating water must be implicitly obeyed by the whole community. A departure from his orders, by the waste of water, or unjust distribution of it, or neglect to make the proper embankments, may endanger the means of subsistence of many people. He must therefore be armed with power to punish promptly and immediately.

The profits of labor are too inadequate for the existence of negro slavery.[119] Slavery, as practiced by the Mexicans, under the form of peonage, which enables their master to get the services of the adult while in the prime of life, without the obligation of rearing him in infancy, supporting him in old age, or maintaining his family, affords no data for estimating the profits of slave labor, as it exists in the United States.

No one who has ever visited this country, and who is acquainted with the character and value of slave labor in the United States, would ever think of bringing his own slaves here with any view to profit, much less would he purchase slaves for such a purpose. Their labor here, if they could be retained as slaves, among peons, nearly of their own color, would never repay the cost of transportation, much less the additional purchase money.

I made many inquiries as to the character of the vast region of country embraced in the triangle, formed by the Colorado of the west, the Del Norte, and the Gila; and the information collected, will, at some future time, be thrown into notes for the benefit of future explorers, but are not given in this work, as I profess to write only of what I saw.

From all that I learn, the country does not differ materially in its physical character from New Mexico, except, perhaps, being less denuded of soil and vegetation. The sources of the Salinas,[120] the San Francisco, Azul, San Carlos, and Prieto, tributaries of the Gila, take their rise in it. About their head waters, and occasionally along their courses, are presented sections of land capable of irrigation.

The whole extent, except on the margin of streams, is said to be destitute of forest trees.[121] The Apaches, a very numerous race, and the Navajoes, are the chief occupants, but there are many minor bands, who, unlike the Apaches and Navajoes, are not nomadic, but have fixed habitations. Amongst the most remarkable of these are the Soones,[122] most of whom are said to be Albinos. The latter cultivate the soil, and live in peace with their more numerous and savage neighbors.

Departing from the ford of the Colorado in the direction of Sonora, there is a fearful desert to encounter. Alter, a small town, with a Mexican garrison, is the nearest settlement.

altar ?

All accounts concur in representing the journey as one of extreme hardship, and even peril. The distance is not exactly known, but it is variously represented at from four to seven days' journey. Persons bound for Sonora from California, who do not mind a circuitous route, should ascend the Gila as far as the Pimos village, and thence penetrate the province by way of Tucson.

November 25. At the ford, the Colorado is 1,500 feet wide, and flows at the rate of a mile and a half per hour. Its greatest depth in the channel, at the ford where we crossed, is four feet. The banks are low, not more than four feet high, and, judging from indications, sometimes, though not frequently, overflowed. Its general appearance at this point is much like that of the Arkansas, with its turbid waters and many shifting sand islands.

The ford is entered at the lower extremity of the plateau upon which we encamped, and leads down the river, crossing three sand islands, which we sketched, but as they are constantly shifting, the sketch will perhaps afford no guide to the traveller, and may even lead him into error. They are therefore not furnished. The ford is narrow and circuitous, and a few feet to the right or left sets a horse afloat. This happened to my own horse.

Report makes the distance of the mouth of the Colorado, from the crossing, eighty miles, but unless the river is very crooked, this cannot be; Lieut. Hardy, of the royal navy, determined the mouth to be in latitude 31° 51″ north, and longitude 114° 1′.

The growth on the river bottom is cotton-wood, willow of different kinds, equisetum hyemale (scouring rush,) and a nutritious grass in small quantities.

After crossing, we ascended the river three quarters of a mile, where we encountered an immense sand drift, and from that point until we halted, the great highway between Sonora and California lies along the foot of this drift, which is continually but slowly encroaching down the valley. Prosopis glandulosa, wild sage, and ephedra compose the growth; the first is luxuriant.

We halted at a dry arroyo, a few feet to the left of the road leading into the Colorado, where there was a hole five or six feet deep, which by deepening, furnished sufficient water for the men.

We are yet, by the indication of the barometer, but 20 or 30 feet above the river, and where the sands from the desert to the north have not encroached, the soil appears good. There are remains of zequias about five miles back, and where we halted, the remains of Indian settlements, but it is probable the water has been cut off by the drift, and cannot now be brought from the river above.

I made observations at night for time and latitude, and found the position of the place to be north latitude 32°40′ 22″, and longitude 114° 56′ 28″, west of Greenwich.

We tied our animals to the mezquite trees, (Prosopis glandulosa,) and remarking on the way they showed an inclination to eat the bean of this plant, we sent the men to collect them; the few gathered were eaten with avidity.

November 26. The dawn of day found every man on horseback and a bunch of grass from the Colorado tied behind him on the cantle of his saddle. After getting well under way, the keen air at 26° Fahrenheit made it most comfortable to walk. We travelled four miles along the sand butte, in the same direction as yesterday, about south 75° west, (magnetic;) we mounted the buttes and found, after a short distance, a firmer footing covered with fragments of lava, rounded by water, and many agates. We were now fairly on the desert.[123]

Our course now inclined a few degrees more to the north, and at 10, a. m., we found a large patch of grama, where we halted for an hour, and then pursued our way over the plains covered with fragments of lava, traversed at intervals by sand buttes, until 4, p. m., when, after traveling 24 miles, we reached the Alamo or cotton-wood. At this point, the captured Spaniards informed us, that failing to find water, they had gone a league to the west, in pursuit of their horses, where they found a running stream. We accordingly sent parties to search, but neither the water nor their trail could be found.

Neither was there any cotton-wood at the Alamo,[7] as its name would signify; but Francisco said that it was nevertheless the place, the tree having probably been covered by the encroachments of the sand, which here terminates in a bluff 40 feet high, making the arc of a great circle convexing to the north.

Descending this bluff, we found in what had been the channel of a stream, now overgrown with a few ill-conditioned mezquite, a large hole where persons had evidently dug for water. It was necessary to halt to rest our animals, and the time was occupied in deepening this hole, which after a strong struggle, showed signs of water. An old champagne basket, used by one of the officers as a pannier, was lowered in the hole, to prevent the crumbling of the sand. After many efforts to keep out the caving sand, a basket-work of willow twigs effected the object, and much to the joy of all, the basket, which was now 15 or 20 feet below the surface, filled with water. The order was now given for each mess to draw a camp-kettle of water, and Captain Turner was placed in charge of the spring, to see fair distribution.

When the messes were supplied, the firmness of the banks gave hopes that the animals might be watered, and each party was notified to have their animals in waiting; the important business of watering then commenced, upon the success of which depended the possibility of their advancing with us a foot further.

Two buckets for each animal were allowed. At 10, p. m., when my turn came, Captain Moore had succeeded, by great exertions, in opening another well, and the one already opened began to flow more freely, in consequence of which, we could afford to give each animal as much as it could drink. The poor brutes, none of which had tasted water in forty-eight hours, and some not for the last sixty, clustered round the well and scrambled for precedence.

At 12 o'clock I had watered all my animals, thirty-seven in number, and turned over the well to Captain Moore.

The animals still had an aching void to fill, and all night was heard the munching of sticks, and their piteous cries for more congenial food.

November 27 and 28. To-day we started a few minutes after sunrise. Our course was a winding one, to avoid the sand-drifts. The Mexicans had informed us that the waters of the salt lake, some thirty or forty miles distant, were too salt to use, but other information led us to think the intelligence was wrong. We accordingly tried to reach it; about 3, p. m., we disengaged ourselves from the sand and went due (magnetic) west, over an immense level of clay detritus, hard and smooth as a bowling green.

The desert was almost destitute of vegetation,[124] now and then an Ephedra, Oenothera, or bunches of Aristida[125] were seen, and occasionally the level was covered with a growth of Obione canescens, and a low bush with small oval plaited leaves, unknown.

The heavy sand had proved too much for many horses and some mules, and all the efforts of their drivers could bring them no farther than the middle of this dreary desert. About 8 o'clock, as we approached the lake, the stench of dead animals confirmed the reports of the Mexicans and put to flight all hopes of our being able to use the water.

The basin of the lake, as well as I could judge at night, is about three-quarters of a mile long and half a mile wide. The water had receded to a pool, diminished to one half its size, and the approach to it was through a thick soapy quagmire. It was wholly unfit for man or brute, and we studiously kept the latter from it, thinking that the use of it would but aggravate their thirst.

One or two of the men came in late, and, rushing to the lake, threw themselves down and took many swallows before discovering their mistake; but the effect was not injurious except that it increased their thirst.

At the point where we left the sand, sketches were taken of the objects by which our pilot wended his way; these may serve to guide future travellers. From this point the traveller may go directly to the gap exhibited in the sketch, nearly magnetic west, through which the trail passes.

A few mezquite trees and a chenopodiaceous shrub bordered the lake, and on these our mules munched till they had sufficiently refreshed themselves, when the call to saddle was sounded, and we groped silently our way in the dark. The stoutest animals now began to stagger, and when day dawned, scarcely a man was seen mounted.

With the sun rose a heavy fog from the southwest, no doubt from the gulf, and sweeping towards us, enveloped us for two or three hours, wetting our blankets and giving relief to the animals. Before it had dispersed we came to a patch of sun-burned grass.

When the fog had entirely dispersed we found ourselves entering a gap in the mountains, which had been before us for four days. The plain was crossed, but we had not yet found water. The first valley we reached was dry, and it was not till 12 o'clock, m., that we struck the Cariso[126] (cane) creek, within half a mile of one of its sources, and although so close to the source, the sands had already absorbed much of its water, and left but little running. A mile or two below, the creek entirely disappears.

We halted, having made fifty-four miles in the two days, at the source, a magnificent spring, twenty or thirty feet in diameter, highly impregnated with sulphur, and medicinal in its properties. No vessel could be procured to bring home some of the water for analysis, but I scraped a handful of the salt which had effloresced to the surface of the adjacent ground, and Professor Frazer finds it to contain sulphate of lime, and magnesia, and chloride of sodium.

The spring consisted of a series of smaller springs or veins, varying in temperature from 68° to 75°. This variation, however, may have been owing to the different exposures of the fountains in which the thermometer was immersed. The growth was cane, rush, and a coarse grass, such as is found on the marshes near the sea shore.

The desert over which we had passed, ninety miles from water to water, is an immense triangular plain, bounded on one side by the Colorado, on the west by the Cordilleras of California, the coast chain of mountains which now encircles us, extending from the Sacramento river to the southern extremity of Lower California, and on the northeast by a chain of mountains, a continuation of the same spur noted on the 22nd as running southeast and northwest. It is chiefly covered with floating sand, the surface of which is white with diminutive spinelas,[127] and everywhere over the whole surface is found the large and soft muscle shell.

I have noted the only two patches of grass found during the "jornada." There were scattered, at wide intervals, the Palafoxia[128] linearis, Atriplex, Encelia farinosa, Daleas, Euphorbias, and a Simsia, described by Dr. Torrey as a new species.

The southern termination of this desert is bounded by the Tecaté chain of mountains and the Colorado; but its northern and eastern boundaries are undefined, and I should suppose from the accounts of trappers, and others, who have attempted the passage from California to the Gila by a more northern route, that it extends many days' travel beyond the chain of barren mountains which bound the horizon in that direction.

The portal to the mountains through which we passed was formed by immense buttes of yellow clay and sand, with large flakes of mica and seams of gypsum. Nothing could be more forlorn and desolate in appearance. The gypsum had given some consistency to the sand buttes, which were washed into fantastic figures. One ridge formed apparently a complete circle, giving it the appearance of a crater; and although some miles to the left, I should have gone to visit it, supposing it to be a crater, but my mule was sinking with thirst, and water was yet at some distance. Many animals were left on the road to die of thirst and hunger, in spite of the generous efforts of the men to bring them to the spring. More than one was brought up, by one man tugging at the halter and another pushing up the brute, by placing his shoulder against its buttocks. Our most serious loss, perhaps, was that of one or two fat mares and colts brought with us for food; for before leaving camp, Major Swords found in a concealed place one of the best pack mules slaughtered, and the choice bits cut from his shoulders and flanks, stealthily done by some mess less provident than others.

I observed at night for time and latitude; for longitude by measuring 18 distances between the moon and Aldebaran, and the moon and Fomalhaut.

Latitude 32° 52′ 33″. Longitude 116° 06′ 09″.

November 29. The grass at the spring was anything but desirable for our horses, and there was scarcely a ration left for the men. This last consideration would not prevent our giving the horses a day's rest wherever grass could be found. We followed the dry sandy bed of the Cariso nearly all day, at a snail's pace, and at length reached the "little pools" where the grass was luxuriant but very salt. The water strongly resembled that at the head of the Cariso creek, and the earth, which was very tremulous for many acres about the pools, was covered with salt.

This valley is at no point more than half a mile wide, and on each side are mountains of grey granite and pure quartz, rising from 1,000 to 3,000 feet above it.

A few miles from the spring called Ojo Grande, at the head of the creek, several scattered objects were seen projected against the cliffs, hailed by the Florida campaigners, some of whom were along, as old friends. They were cabbage trees,[129] and marked the locale of a spring and a small patch of grass. We found also to-day, in full bloom, the Fouquiera spinosa,[130] a rare and beautiful plant; the Plantago, new to our flora; a new species of Eriogonum, very remarkable for its extremely numerous long hair-like fruit stalks and minute flowers.

We rode for miles through thickets of the centennial plant, Agave Americana,[131] and found one in full bloom. The sharp thorns terminating every leaf of this plant were a great annoyance to our dismounted and wearied men whose legs were now almost bare. A number of these plants were cut by the soldiers, and the body of them used as food. The day was intensely hot, and the sand deep; the animals, inflated with water and rushes, gave way by scores; and, although we advanced only sixteen miles, many did not arrive at camp until 10 o'clock at night. It was a feast day for the wolves, which followed in packs close on our track, seizing our deserted brutes and making the air resound with their howls as they battled for the carcasses.

The water comes to the surface in pools at this place. It is a valley surrounded by high bleak mountains destitute of vegetation. The mountains are of a micaceous granite seamed with volcanic matter. The grass, which is coarse, extends for a mile or two along the valley.

A heavy cloud overhung the mountains to the west, and the wind blew a hurricane from that quarter; yet our zenith was never obscured, except for a minute at a time by a fleeting cloud detached from the great bank. A horse was killed for food, which was eaten with great appetite, and all of it consumed.

November 30. Notwithstanding the water was saltish and in pools, and the grass unfavorable to the horses, yet we were compelled to avail ourselves of it for a day to recruit. The day and night were very unpleasant, from the high wind which came over the snow clad mountains to the west. The ground, too, was tremulous, and my observations for time, by which I hoped to obtain the rate of my chronometers, were not such as I could desire.

December 1. We ascended the valley, now destitute of both grass and water, to its termination, and then descended to the deserted Indian village of San Felippe. The mountains on either side are lofty, I suppose from 3,000 to 5,000 feet high, and those to the west encrusted on the top with snow and icicles. Our camp was in a long field of grass, three or four miles in extent, through which a warm stream flowed and drained through a cañon to the north, abreast of the village. We went to the barren hills and collected the dry sage and scrub mezquite, with which we made a feeble fire. The Larrea Mexicana grew here also, but it is unfit for fuel.

About nine miles from the camp, we passed the summit which is said to divide the waters flowing into the Colorado from those flowing into the Pacific, but I think it is a mistake. The pass is much below the peaks on either side, and the height gives no indication of the elevation of the range, and, indeed, the barometric reading was but an indifferent index of the height of the pass, as the day was stormy. We are still to look for the glowing pictures drawn of California. As yet, barrenness and desolation hold their reign. We longed to stumble upon the rancherias, with their flocks of fat sheep and cattle. Meat of horses, may be very palatable when fat, but ours are poor and tough, and it is hard to satisfy the cravings of hunger with such indifferent food.

Early in the day's march, we met two Indians, a man and woman; they could give us no information of what was passing on the western side of the mountains. They continued on with the utmost indifference, exhibiting no signs of fear or astonishment at this sudden apparition of ragged blue-coats. They had fine athletic figures, but were prematurely wrinkled from poverty and exposure to cold.

December 2 and 3. We commenced to ascend another "divide," and as we approached the summit the narrow valley leading to it was covered with timber and long grass. On both sides, the evergreen oak grew luxuriantly, and, for the first time since leaving the States, we saw what would even there be called large trees. Emerging from these, we saw in the distance the beautiful valley of the Aqua Caliente, waving with yellow grass, where we expected to find the rancheria owned by an American named Warner.

nce
iego
outheast

As we passed, crows and wolves were seen in numbers.

Leaving the valley, we ascended the hills to the north covered with mezquite, estafiat;[132] &c. Our progress was slow and painful; we thought Warner's rancheria[133] would never open on our eager sight, when suddenly it burst upon our view at the foot of the hill. We were mistaken for Indians, and soon were seen horsemen at full speed driving off cattle and horses to the mountains. We quickened our pace to arrest this proceeding. The rancheria was in charge of a young fellow from New Hampshire, named Marshall. We ascertained from him that his employer was a prisoner to the Americans in San Diego, that the Mexicans were still in possession of the whole of the country except that port, San Francisco, and Monterey; that we were near the heart of the enemy's stronghold, whence he drew his supplies of men, cattle and horses, and that we were now in possession of the great pass to Sonora, by which he expected to retreat, if defeated, to send his prisoners if successful, and to communicate with Mexico.

To appease hunger, however, was the first consideration. Seven of my men ate, at one single meal, a fat full grown sheep. Our camp was pitched on the road to the Pueblo, leading a little north of west. To the south, down the valley of the Aqua Caliente, lay the road to San

Diego. Above us was Mr. Warner's backwoods, American-looking house, built of adobe and covered with a thatched roof. Around, were the thatched huts of the more than half naked Indians, who are held in a sort of serfdom by the master of the rancheria. I visited one or two of these huts, and found the inmates living in great poverty. The thermometer was at 30°, they had no fires, and no coverings but sheepskins. They told me that when they were under the charge of the missions they were all comfortable and happy, but since the good priests had been removed, and the missions placed in the hands of the people of the country, they had been ill treated. This change took place in 1836,[134] and many of the missions passed into the hands of men and their connexions who had effected the change.

Near the house is the source of the Aqua Caliente, a magnificent hot spring, of the temperature of 137° Fahrenheit, discharging from the fissure of a granite rock a large volume of water, which, for a long distance down, charges the air with the fumes of sulphuretted hydrogen. Above it, and draining down the same valley, is a cold spring of the temperature of 45°, and without the aid of any mechanical instrument, the cold and warm water may be commingled to suit the temperature of the bather.

The Indians have made pools for bathing. They huddle around the basin of the spring to catch the genial warmth of its vapors, and in cold nights immerse themselves in the pools to keep warm. A day will come, no doubt, when the invalid and pleasure seeking portion of the white race, will assemble here to drink and bathe in these waters, ramble over the hills which surround it on all sides, and sit under the shade of the great live oaks that grow in the valley.

prediction of
tourist trad

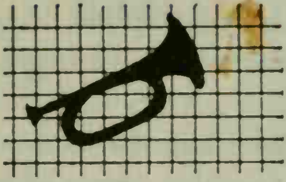
Our information in reference to the state of affairs in California was yet very imperfect and unsatisfactory. Marshall spoke of a Mr. Stokes, an Englishman, who lived fifteen miles distant, on the road to San Diego. The general at once despatched Marshall to him, and in three hours he appeared in our camp, presenting a very singular and striking appearance. His dress was a black velvet English hunting coat, a pair of black velvet trousers, cut off at the knee and open on the outside to the hip, beneath which were drawers of spotless white; his leggins were of black buck-skin, and his heels armed with spurs six inches long. Above the whole bloomed the broad merry face of Mr. Stokes, the Englishman. He was very frank, proclaimed himself a neutral, but gave us all the information he possessed; which was, that Commodore Stockton was in possession of San Diego, and that all the country between that place and Santa Barbara was in possession of the "country people." He confirmed all that Marshall had said, and stated he was going to San Diego the next morning. The general gave him a letter for that place.

I made observations at night for time and latitude, but the flying clouds, and the trembling ground on which we were encamped, made it a delicate operation.

Information was received on the 2nd, that fifteen miles distant, on the road to the Pueblo, a band of horses and mules were cached, belonging to General Flores and others. Tired as our people were, nightfall found twenty-five of them in the saddle, with fresh horses, under the command of Lieut. Davidson, accompanied by Carson, on their way in pursuit of the cache. Davidson was successful, and returned with the horses on the 3rd, about meridian; but the animals, like those we captured at the mouth of the Gila, were mostly unbroken, and not of much service.

My observations give for the latitude of our camp this date, which was on the meadow to the south of the rancheria, 33° 16′ 57″.

We remained in camp on the 3rd to rest.



Battle of San Pasqual... Rescue... Arrival at San Diego... San Luis Rey... Fighting at the San Gabriel... Los Angeles Occupied... Final Observations.

December 4. The morning was murky, and we did not start till 9 o'clock, about which time it commenced to rain heavily, and the rain lasted all day. Our route was chiefly through narrow valleys overtopped by high hills of some fertility, covered with oaks. We were now in the region of rains, and the vegetation, though not luxuriant, was very much changed, but it was too late in the fall to get the flowers or fruits to determine the plants.

Our camp was pitched, after marching 13½ miles, in the valley of the Rio Isabel, near the rancheria of Mr. Stokes, formerly the mission of Saint Isabel.[135]

Mr. S. had gone, but he left his keys with a man whom the Spaniards called Signor Beel,[136] with directions to entertain us. The Signor was a deserter from an English merchantman, and had lived in the neighboring mountains some ten years; during this time he had acquired a little property, and some knowledge of Spanish, but the sailor was visible in all his acts. Before night Mr. Beel had made good use of his keys, and shone in his true colors as sailor Bill.

We were drenched to the skin, and looked forward with some pleasure to the idea of once more entering a house, with a blazing fire and plenty to eat and drink. In the last two items we were entirely satisfied, but sadly disappointed in finding no fire, the only chimney about the rancheria being in the kitchen.

The dragoons took the dinner intended for the officers, and we were obliged to stand, cracking our heels in the cold damp chapel, now converted into a hall, for two hours, before the Signor, or rather Sailor Bill, could cook another dinner.

The appearance of desolation which the rancheria presents is little calculated to impress us with favorable notions of the agricultural resources of this part of California. The land in the narrow valleys is good, but surrounded every where by high barren mountains, and where the land is good, the seasons are too dry for men to attempt cultivation without facilities for irrigation.

December 5. A cold rainy day, and the naked Indians of the rancheria gathered around our fires. We marched from the rancheria of San Isabel to that of Santa Maria. On the way we met Capt. Gillespie, Lieut. Beale, and Midshipman Duncan of the navy, with a party of thirty-five men, sent from San Diego with a despatch to Gen. Kearny. We arrived at the rancheria after dark, where we heard that the enemy was in force nine miles distant, and not finding any grass about the rancheria, we pushed on and encamped in a cañon two miles below. It was long after night when we halted, and though there may have been plenty of grass, we could not find it. Besides the rain, a heavy fog obscured the landscape, and little could be seen of the country during the day's journeying; what we did see, however, did not impress us favorably as to its fertility.

Although this was the rainy season, no flowing streams were crossed after leaving the San Isabel, and the ground was destitute of grass. Our camp was in a valley, overgrown with large oak trees and other shubbery; but it was too dark to distinguish their character.

A party under Lieut. Hammond was sent to reconnoitre the enemy, reported to be near at hand. By some accident the party was discovered, and the enemy placed on the qui vive. We were now on the main road to San Diego, all the "by-ways" being in our rear, and it was therefore deemed necessary to attack the enemy, and force a passage. About 2 o'clock, a. m., the call to horse was sounded.

December 6. We marched nine miles before day-break over a hilly country, leaving our packs to come on in the rear. The general invited Mr. Warner and myself to ride with him, and taking four of my party, I left Messrs. Bestor and Stanly with the rest, six in number, to take care of the baggage, and look after the instruments and notes.

When within a mile of the enemy, whose force was not known to us, his fires shone brightly. The general and his party were in advance, preceded only by the advanced guard of twelve men under Captain Johnston. He ordered a trot, then a charge, and soon we found ourselves engaged in a hand to hand conflict with a largely superior force.

For an account of this engagement, reference may be made to the official report of the general, which has been published. The subjoined topographical sketch* will show the first and second position of the enemy, and his final rout. As day dawned, the smoke cleared away, and we commenced collecting our dead and wounded. We found 18 of our officers and men were killed on the field, and 13 wounded.

Amongst the killed were Captains Moore and Johnston,[137] and Lieutenant Hammond of the 1st dragoons.

The general, Capt. Gillespie, Capt. Gibson, Lieut. Warner, and Mr. Robideau badly wounded.

A large body of horsemen were seen in our rear, and fears were entertained lest Major Swords and the baggage should fall into their hands. The general directed me to take a party of men and go back for Major Swords and his party. We met at the foot of the first hill, a mile in rear of the enemy's first position. Returning, I scoured the village to look for the dead and wounded. The first object which met my eye was the manly figure of Capt. Johnston. He was perfectly lifeless, a ball having passed directly through the centre of his head.

The work of plundering the dead had already commenced; his watch was gone, nothing being left of it but a fragment of the gold chain by which it was suspended from his neck. By my directions Sergeant Falls and four men took charge of the body and carried it into camp. Captain Johnston and one dragoon were the only persons either killed or wounded on our side in the fight by firearms.

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* Omitted.

Information was received that the dead, no matter where buried, would be dug up to rob the bodies of their clothes, and orders were given to pack them on mules, with the intention of carrying them to San Diego, but it was found that there were not a sufficient number of strong animals left to convey both the dead and the wounded and directions were given therefore to inter them at night as secretly as possible.

When night closed in, the bodies of the dead were buried under a willow to the east of our camp, with no other accompaniment than the howling of myriads of wolves, attracted by the smell. Thus were put to rest together, and forever, a band of brave and heroic men. The long march of 2,000 miles had brought our little command, both officers and men, to know each other well. Community of hardships, dangers, and privations, had produced relations of mutual regard which caused their loss to sink deeply in our memories.

The general's wounds were so serious, that during the day Captain Turner assumed command and directed operations. There was but one surgeon in our party, Dr. Griffin, and notwithstanding his great skill and assiduity, he did not finish dressing the wounded till late in the afternoon, nor were the ambulances for their transportation completed. This, with the desire to bury our dead under cover of night, caused the forward movement to be postponed till morning.

Our provisions were exhausted, our horses dead, our mules on their last legs, and our men, now reduced to one third of their number, were ragged, worn down by fatigue, and emaciated. The officers of Captain Gillespie's party said there were wheel carriages at San Diego, 39 miles distant, and it was determined to send there for the means of conveying our wounded. Early in the day, Godey, with a few picked men, was on his way by a circuitous route to that place.

Our position was defensible, but the ground, covered with rocks and cacti, made it difficult to get a smooth place to rest, even for the wounded. The night was cold and damp, and notwithstanding our excessive fatigues of the day and night previous, sleep was impossible.

December 7. Day dawned on the most tattered and ill-fed detachment of men that ever the United States mustered under her colors. The enemy's pickets and a portion of his force were seen in front. The sick, by the indefatigable exertions of Dr. Griffin, were doing well, and the general enabled to mount his horse. The order to march was given, and we moved off to offer the enemy battle, accompanied by our wounded, and the whole of our packs. The ambulances grated on the ground, and the sufferings of the wounded were very distressing. We had made for them the most comfortable conveyance we could, and such as it was, we were indebted principally to the ingenuity of the three remaining mountain men of the party, Peterson, Londeau, and Perrot. The fourth, the brave François Ménard, had lost his life in the fight of the day before. The general resumed command, placing Captain Turner, of the dragoons, in command of the remnant of dragoons, which were consolidated into one company.

Arranging our wounded and the packs in the centre, we marched towards San Diego in the direction of the San Barnardo rancheria, taking the right hand road over the hills, and leaving the river San Barnardo to the left. The enemy retired as we advanced. When we arrived at the rancheria of San Barnardo, we watered our horses and killed chickens for the sick. The rancheria was the property of Mr. Snooks, an Englishman; it was deserted except by a few Indians.

Finding no grass about the rancheria, we moved on towards the bed of the river, driving many cattle before us. We had scarcely left the house and proceeded more than a mile, when a cloud of cavalry debouched from the hills in our rear, and a portion of them dashed at full speed to occupy a hill by which we must pass, while the remainder threatened our rear. Thirty or forty of them got possession of the hill, and it was necessary to drive them from it. This was accomplished by a small party of six or eight, upon whom the Californians delivered their fire; and strange to say, ~~not one of our men fell.~~ The capture of the hill was then but the work of a moment, and when we reached the crest, the Californians had mounted their horses and were in full flight. We did not lose a man in the skirmish, but they had several badly wounded. By this movement we lost our cattle, and were convinced that if we attempted any further progress with the ambulances we must lose our sick and our packs. It was impossible to move in the open field with these encumbrances, against an enemy more than twice our number, and all superbly mounted. The general, therefore, determined to halt for the night, to have the wounds of the sick redressed, and then to cut our way to San Diego.

December 8. We bored holes for water, and killed the fattest of our mules for meat. In the morning a flag of truce was sent into our camp, informing us that Andres Pico,[138] the commander of the Mexican forces, had just captured four Americans, and wished to exchange them for a like number of Californians. We had but one to exchange, and with this fellow I was sent to meet Andres Pico, whom I found to be a gentlemanly looking and rather handsome man.

The conversation was short; for I saw the man he wished to exchange was Burgess, one of those sent on the morning of the 6th to San Diego, and we were very anxious to know the result of his mission. Taking rather a contemptuous leave of his late captors, he informed us of the safe arrival of himself and Godey at San Diego. He also stated that when captured, his party, consisting of himself and two others, on their return from San Diego, had previously "cached" their letters under a tree, which he pointed out; but on subsequent examination, we found the letters had been abstracted.

Our wounded were still in no condition to move; to have attempted to transport them would have required one half of our fighting force, and it was decided most expedient to wait until they could be carried on horseback. At night, Lieutenant Beale, of the navy, Mr. Carson, and an Indian, volunteered to go to San Diego, 29 miles distant—an expedition of some peril, as the enemy now occupied all the passes to that town.

The observations made to-night give for the latitude of this camp, 33° 03′ 42″, and the longitude 117° 03′ 29″.

Don Antonio Robideaux, a thin man of fifty-five years, slept next to me. The loss of blood from his wounds, added to the coldness of the night, 28° Fahrenheit, made me think he would never see daylight, but I was mistaken. He woke me to ask if I did not smell coffee, and expressed a belief that a cup of that beverage would save his life, and that nothing else would. Not knowing there had been any coffee in camp for many days, I supposed a dream had carried him back to the cafes of St. Louis and New Orleans, and it was with some surprise I found my cook heating a cup of coffee over a small fire of wild sage. One of the most agreeable little offices performed in my life, and I believe in the cook's, to whom the coffee belonged, was, to pour this precious draught into the waning body of our friend Robideaux. His warmth returned, and with it hopes of life. In gratitude he gave me, what was then a great rarity, the half of a cake made of brown flour, almost black with dirt, and which had, for greater security, been hidden in the clothes of his Mexican servant, a man who scorned ablutions. I ate more than half without inspection, when, on breaking a piece, the bodies of several of the most loathesome insects were exposed to view. My hunger, however, overcame my fastidiousness, and the morceau did not appear particularly disgusting until after our arrival at San Diego, when several hearty meals had taken off the keenness of my appetite, and suffered my taste to be more delicate.

Starvation makes
maggots a
feast

Last night the brave Sergeant Cox died of his wounds, and was buried to-day deep in the ground, and covered with heavy stones, to prevent the wolves from tearing him up. This was a gallant fellow, who had, just before leaving Fort Leavenworth, married a pretty wife.

December 10. The enemy attacked our camp, driving before them a band of wild horses, with which they hoped to produce a stampede. Our men behaved with admirable coolness, turning off the wild animals dexterously. Two or three of the fattest were killed in the charge, and formed, in the shape of a gravy-soup, an agreeable substitute for the poor steaks of our worn down brutes, on which we had been feeding for a number of days.

Dr. Griffin gave the welcome information that all the sick, but two, were able to get in the saddle, and orders were given to march the next morning.

There was little expectation that Carson and Lieutenant Beale would succeed in reaching San Diego; the hiding place pointed out by Burgess was examined, and the letters from San Diego were not found.

We were all reposing quietly, but not sleeping, waiting for the break of day, when we were to go down and give the enemy another defeat. One of the men, in the part of the camp assigned to my defence, reported that he heard a man speaking in English. In a few minutes we heard the tramp of a column, followed by the hail of the sentinel. It was a detachment of 100 tars and 80 marines under Lieutenant Gray, sent to meet us by Commodore Stockton, from whom we learned that Lieutenant Beale, Carson, and the Indian had arrived safely at San Diego. The detachment left San Diego on the night of the 9th, cached themselves during the day of the 10th, and joined us on the night of that day. These gallant fellows busied themselves till day distributing their provisions and clothes to our naked and hungry people.

ainable
an retreat

December 11. The junction of our forces was a complete surprise to the enemy, and when the sun rose but a small squadron of horse was to be seen at Stokes' rancheria. They had fled precipitately leaving most of the cattle behind them, for which we had been contending for the last three days. None of our men were mounted—theirs were all mounted; and why they should have left their stock is inconceivable. It was certainly not incompatible with their safety to have carried them all away. The only way of accounting for it is, by supposing our night attack had filled them with the unnecessary fear of being surprised. We drove the cattle before us.

Our march was in close order, over a road leading through a rolling country of light black soil, destitute of trees, and without water, covered with oats indigenous to the soil, now fallen to decay. The grass in protected places was sprouting, but not in sufficient quantity to afford grazing to our stock. After marching twelve miles we arrived at the rancheria of Signor Alvarado, a person who was in the fight against us. The women and children had fled to the mountains, leaving plenty of turkeys, chickens, goats and sheep behind; also two casks of wine, the produce of the country. The havoc committed on the comestibles was immense; the sheep not killed were driven by us into San Diego. The owner had taken the oath of allegiance to the United States and broken it.

The navy took a prisoner at this house as they marched to meet us. He gave us much information, and was then liberated. He stated that Pico's force consisted of 160 men, 100 of which were drawn from the Pueblo, and the balance from the surrounding country. We subsequently received authentic accounts that his number was 180 men engaged in the fight, and that 100 additional men were sent him from the Pueblo, who reached his camp on the 7th.

There was a fine spring at this rancheria, and another two miles below it.

On the hill, before reaching the rancheria, the Pacific opened for the first time to our view, the sight producing strange but agreeable emotions. One of the mountain men who had never seen the ocean before, opened his arms and exclaimed: "Lord! there is a great prairie without a tree."

December 12. We followed the Solidad[139] through a deep fertile valley in the shape of a cross. Here we ascended to the left a steep hill to the table lands, which, keeping for a few miles, we descended into a waterless valley, leading into False Bay at a point distant two or three miles from San Diego. At this place we were in view of the fort overlooking the town of San Diego and the barren waste which surrounds it.

The town consists of a few adobe houses, two or three of which only have plank floors. It is situated at the foot of a high hill on a sand flat, two miles wide, reaching from the head of San Diego bay to False bay. A high promontory, of nearly the same width, runs into the sea four or five miles, and is connected by the flat with the main land. The road to the hide houses leads on the east side of this promontory, and abreast of them the frigate Congress and the sloop Portsmouth are at anchor. The hide houses are a collection of store houses where the hides of cattle are packed before being shipped; this article forming the only trade of the little town.

The bay is a narrow arm of the sea indenting the land some four or five miles, easily defended, and having twenty feet of water at the lowest tide. The rise is said to be five feet, making the greatest water twenty-five feet.

Standing on the hill which overlooks the town, and looking to the northeast, I saw the mission of San Diego,[140] a fine large building now deserted. The Rio San Diego runs under ground in a direct course from the mission to the town, and sweeping around the hill, discharges itself into the bay. Its original debouche was into False bay, where, meeting the waters rolling in from the seaward, a bar was formed by the deposits of sand, making the entrance of False bay impracticable.

Well grounded fears are entertained that the immense quantity of sand discharged by this river will materially injure, if it does not destroy the harbor of San Diego; but this evil could be arrested at a slight cost, compared with the objects to be obtained. At present San Diego is, all things considered, perhaps one of the best harbors on the coast from Callao[141] to Puget's Sound, with a single exception, that of San Francisco. In the opinion of some intelligent navy officers, it is preferable even to this. The harbor of San Francisco has more water, but that of San Diego has a more uniform climate, better anchorage, and perfect security from winds in any direction. However, the commercial metropolis must be at San Francisco, owing to the greater extent and superiority of the country adjacent, watered by the rivers Sacramento and San Joachim,[142] unless indeed San Diego should be made the terminus of a railroad leading by the route of the Gila to the Del Norte, and thence to the Mississippi and the Atlantic.

The rain fell in torrents as we entered the town, and it was my singular fate here, as in Santa Fé, to be quartered in the calaboose, a miserable hut, of one room, some 40 x 30 feet square. A huge old gun was mounted in this hovel, looking through an embrasure to the westward. In this building I was told that I could stow my party and my instruments safely.

We preferred the open air and the muddy plaza, saturated with all sorts of filth, to this wretched hole; but having no alternative, our chronometers and instruments were stowed in it and guarded by the indefatigable Mr. Bestor. I went off to accept from the hospitality of a friend the first bed I had seen in many months. After midnight there was one of those false alarms which ever and anon disturbed this goodly town. Four burly fellows rushed to man this gun, but they found themselves unexpectedly opposed by Mr. Bestor and two or three of my party. But for this timely resistance, my whole little stock of chronometers, barometer, &c., would have been totally destroyed. In the morning, through the kind exertions of my friend, Captain Gillespie, I was enabled to get a house with two rooms, the only unoccupied quarters in the town. Foreseeing employment of a different nature, my little party occupied themselves busily in collecting and bringing up the notes of our field-work.

On the 28th December I received notification from General Kearny to leave my party in San Diego, and report to him for duty, as the acting adjutant general of the forces; Captain Turner, his adjutant general, having been assigned by him to the command of the remnant of the company of the 1st dragoons.

Lt. Warner was still too unwell, from the wounds received at San Pasqual, to accompany us, or to commence the survey of San Diego bay. Wishing to have a secure place to deposit my instruments, notes, &c., I applied to Captain Dupont to give them a place on board the Cyane. He granted this request and kindly insisted that Mr. Bestor and Mr. Stanly should also go on board, where they could pursue their work unmolested.

I should be very ungrateful if I did not here make my acknowledgments to Captain Dupont, and all the officers of the navy with whom we were thrown in contact, for the uniform kindness and the generous hospitality with which they always supplied our personal wants, and the promptness with which they rendered assistance in any public enterprise.

My work as a topographical engineer may be considered to end at this place; and that portion of the map embraced between San Diego and the Pueblo or Cuidad de los Angeles is compiled from existing maps, with slight alterations made by myself from a view of the ground, without the aid of instruments.

The coast is taken from old Spanish charts, published in Madrid in

1825, kindly furnished me by Captain Wilkes. The harbor of San Diego has been surveyed by Captain Sir Edward Belcher, of the royal navy, whose determination of the longitude of the spit to the south of Punta Loma, published in his "voyage round the world," has been adopted, in the absence of time or instruments to enable me to make the requisite observations.

The longitude of the same point by Malispina 117° 17′, and the chronometric longitude brought by myself from my last station over the mountains, where lunar distances were observed, 117° 14′; but I have not hesitated to take the results of Sir Edward Belcher, although I have had no opportunity of seeing his observations.

Malispina's observations were made long since, and the results from the chronometers brought overland by me are liable to objections: first, from the imperfection in the determination of my intermediate stations by lunar distances, and, next, from the disturbances to which the chronometers were subjected in the battle of the 6th December, and the skirmish of the 7th, but more particularly the last, where a sudden charge was made in an open plain on our baggage by the enemy's cavalry.

The harbor was originally explored by Sebastian Vizcaino in 1603, but no settlement was made at San Diego until 1769.

Vessels may ride at anchor in the harbor, perfectly land-locked, but in very heavy southerly gales some inconvenience may be felt by those not provided with good ground tackle, from the immense volumes of kelp driven into the harbor.

The kelp (fucus giganteus) occupies a space in front of the harbor some miles in length and half a mile wide. At a distance, I took the kelp for a low island, but was informed of my error by Captain Schenck, who told me vessels were forced through it in a stiff breeze.

On the morning of the 29th December we marched out of San Diego with the following force:

	Capt.	Lieut.	Sergt.	Corpl.	Bug.	Privates
Dragoons	1	1	2	4	2	47
Sailors acting artillery	1	1	2	4	–	39
Sailors and marines acting infantry ...	8	10	17	17	–	345
Volunteers	3	3	6	–	–	48

Three employees of the topographical engineers, three medical officers, and twenty-five men, Indians, and Californians; the whole divided into four divisions or battalions, commanded by Lieutenant Rowan, Captain Turner, Lieutenant Renshaw, Lieutenant Zielin, and Captain Gillespie.

Six pieces of artillery, of various calibre, got up with great exertion, under the orders of Commodore Stockton, by Lieutenant Tilghman of the navy, acting as captain of artillery.

A wagon train, consisting of one four-wheel carriage and ten ox carts, under the charge of Lieutenant Minor of the navy. The wagons were heavily laden, and our progress was slow in the extreme. We did not reach the Solidad, the first watering place, till 8 o'clock at night.

I was ordered to ride forward and lay out a defensive camp, hoping to give confidence to the sailors, many of whom were now, for the first time, transferred to a new element.

We soon found their habits of discpline aboard ship made the transition easy, and I speedily arrived at the conclusion that Jack, properly handled, made a very good infantry soldier.

The plan of the camp being approved, I was directed to make it the habitual order of encamping wherever the configuration of the ground would admit. The plan was the natural one to protect ourselves from the night attacks of the enemy, who were all mounted. The mode in which they designed to make their night attacks was to drive into our camp a "manada" of wild mares, and then take advantage of the confusion they might create to deliver a charge.

December 30. We encamped at the rancheria of Alvéar.

December 31. We encamped at the San Barnardo, having gone in three days only 30 miles. The ground passed over was the same as that described in the last two days of our march into San Diego.

January 1. To-day we obtained some fresh oxen and a few fresh horses, which enabled us to do better and make 17 miles before sunset. Our road to-day diverged from that heretofore described, and laid over a rolling country, destitute of water and trees. Cattle were seen, in small numbers, covering the plains in all directions, proving to us that the enemy had found it impracticable to fulfil their boast, that we should not get a hoof from the day we left San Diego.

We pitched our camp at the Indian settlement of Buena Vista, passing by the way a deserted rancheria, where there was a puddle of stagnant water, the only water on the route.

January 2. Six and a half miles march brought us to the deserted mission of San Luis Rey.[143] The keys of this mission were in charge of the alcalde of the Indian village, a mile distant. He was at the door to receive us and deliver up possession.

There we halted for the day to let the sailors, who suffered dreadfully from sore feet, recruit a little.

This building is one which, for magnitude, convenience, and durability of architecture, would do honor to any country.

The walls are adobe, and the roofs of well made tile. It was built about sixty years since by the Indians of the country, under the guidance of a zealous priest. At that time the Indians were very numerous, and under the absolute sway of the missionaries. These missionaries at one time bid fair to Christianize the Indians of California. Under grants from the Mexican government, they collected them into missions, built immense houses, and commenced successfully to till the soil by the hands of the Indians for the benefit of the Indians.

The habits of the priests, and the avarice of the military rulers of the territory, however, soon converted these missions into instruments of oppression and slavery of the Indian race.

The revolution of 1836 saw the downfall of the priests, and most of these missions passed by fraud into the hands of private individuals,[144] and with them the Indians were transferred as serfs of the land.

This race, which in our country, has never been reduced to slavery, is in that degraded condition throughout California, and do the only labor performed in the country. Nothing can exceed their present degraded condition.

Good for Calif Indian

For negligence or refusal to work, the lash is freely applied, and in many instances life has been taken by the Californians without being held accountable by the laws of the land.

This mission of San Luis Rey was, until the invasion of California by the Americans, in 1846, considered as public property. Just before that event took place, a sale was made of it for a small consideration, by the Mexican authorities, to some of their own people, who felt their power passing away, and wished to turn an *honest penny* whilst their power was left; but this sale was undoubtedly fraudulent, and will, I trust, not be acknowledged by the American government. Many other missions have been transferred in the same way; and the new government of California must be very pure in its administration to avoid the temptations which these fictitious sales, made by the retiring Mexican authorities, offer for accumulating large fortunes at the expense of the government.

The lands belonging to this mission are extensive, well watered, and very fertile. It is said, and I believe it probable from appearances, that wheat will grow in the valleys adjacent, without irrigation.

January 3. After marching a few miles the wide Pacific opened to our view. We passed the St. Marguerita rancheria, once a dependency of San Luis Rey, now in the possession of the Pico family. We encamped near Flores, a deserted mission. Just below it, and near the ocean, is an Indian village. Cattle were seen in great numbers to-day, and several well broken pairs of oxen were picked up on the way.

Distance 10.5 miles.

January 4. After leaving Flores a few miles, the high broken ground projects close in upon the sea, leaving but a narrow, uneven banquette, along which the road wends through a growth of chapparal.

Here we met three persons, bearing a flag of truce; one an Englishman, named Workman, another Fluge, a German, the third a Californian.

They brought a letter from Flores, who signed himself governor and captain general of the department of California, proposing to suspend hostilities in California, and leave the battle to be fought elsewhere between the United States and Mexico, upon which was to depend the fate of California. There was a great deal of other matter in the letter, useless to repeat. The commission returned with a peremptory refusal of the proposition of the governor and Captain General Flores.

After going nine miles from Flores, the high land impinges so close upon the sea that the road lies along the sea beach for a distance of eight miles. Fortunately for us the tide was out, and we had the advantage of a hard, smooth road. Notwithstanding this, our column stretched out to a great distance, and we were compelled to make frequent halts for the rear to come up.

This pass presents a formidable military obstacle, and, in the hands of an intrepid and skilful enemy, we could have been severely checked, if not beaten back from it; but we passed unmolested, and encamped late at night on an open plain at the mouth of the stream leading from the mission of San Juan de Capristano,[145] and about two miles from the mission.

It was so dark I could not see to lay off the lines of the camp accurately, and I was glad, in the morning, that an early start gave no time for criticism. Distance 18.8 miles.

January 5. The mission of San Juan has passed into the hands of the Pico family. The cathedral was once a fine strong building, with an arched cupola; only one-half of the building, capped by a segment of the cupola, is now standing, the other part having been thrown down by an earthquake in the year 1822, killing some thirty or forty persons who had fled to it for refuge.

Attracted by a house having a brush fence round the door, as if to keep out intruders, I was told there were four men within, in the agonies of death, from wounds received at the battle of San Pasqual.

We moved to the Alisos rancheria, where we found a spring of good water, but nothing to eat. Through the kindness of Mr. Foster, an Englishman, we received here a supply of fresh horses.

The road was principally through the valley of the stream watering the mission. On each side were beautiful rounded hills, covered with a delicate tinge of green from the grass, which was now sprouting freely near the sea coast.

Up to this point, except a small patch at Flores, I had not seen the mark of a plough or any other instrument of husbandry. The rancherias were entirely supported by rearing cattle and horses. Distance 11.1 miles.

January 6. To-day we made a long march of 19 miles to the upper Santa Anna,[146] a town situated on the river of the same name. We were now near the enemy, and the town gave evidence of it. Not a soul was to be seen; the few persons remaining in it were old women, who, on our approach, had bolted their doors. The leaders of the Californians, as a means of inciting their people to arms, made them believe we would plunder their houses and violate their women.

Taking advantage of a deep ditch for one face of the camp, it was laid off in a very defensible position between the town and the river, expecting the men would have an undisturbed night's rest, to be in the morning ready for the fight, which might now be expected daily. In this hope we were mistaken. The wind blew a hurricane, (something very unusual in this part of California,) and the atmosphere was filled with particles of fine dust, so that one could not see and but with difficulty breathe.

January 7. The wind continued to blow violently, which the enemy should have taken advantage of to attack us. Our weapons were chiefly fire-arms; his, the lance;[147] and I was quite certain that in such a gale of wind as then blew, the difficulty of loading our arms would have proved a serious matter.

atch?

The Santa Anna is a fine dashing stream, knee-deep, and about 100 yards wide, flowing over a sandy bed. In its valley are many valuable vine yards and corn fields. It is capable of affording water to a great many more. On its banks are considerable tracts of uncultivated land within the level of irrigation. We now began to think there would be more formidable and united resistance by the enemy, and such was the unanimity of the men, women and children, in support of the war, that not a particle of information could be obtained in reference to his force or position.

After travelling ten miles we came to the Coyotes, a rancheria owned by a rich widow lady, who had just married a handsome young fellow, who might well pass for her son. These people we found at home, and we learned from them that the enemy intended to give us battle the next day. Indeed, as we approached the rancheria, several horsemen drew off, reconnoitring us so closely as to make it doubtful if they were not some of our own vaqueros.

January 8. We passed over a country destitute of wood and water, undulating and gently dipping towards the ocean, which was in view. About two o'clock we came in sight of the San Gabriel river. Small squads of horsemen began to show themselves on either flank, and it became quite apparent the enemy intended to dispute the passage of the river.

Our progress was necessarily very slow, our oxen being poor, and our wagons (the ox-carts of the country) with wheels only about two feet in diameter.

The enemy did not yet discover his order of battle, and we moved to the river in our habitual order of march, when near the enemy, viz: the 2nd division in front, and the 1st and 3rd on the right and left flanks respectively; the guard and a company of volunteer carbiniers in the rear; our cattle and the wagon train in the centre, making for them, what the sailors wittily termed a Yankee "corral." The artillery were distributed on the four angles of the rectangle.

This order of march was adopted from the character of the enemy's force, all of which was mounted; and in a measure from our own being men unaccustomed to field evolutions, it was necessary to keep them habitually in the order to resist cavalry attacks when in view of the enemy. We had no cavalry, and the object of the enemy was to deprive us of our cattle by sudden charges.

The river was about 100 yards wide, knee-deep, and flowing over quick-sand. Either side was fringed with a thick undergrowth. The approach on our side was level; that on the enemy's was favorable to him. A bank fifty feet high, ranged parallel with the river, at point blank cannon distance, upon which he posted his artillery.

As we neared the thicket, we received the scattering fire of the enemy's sharp-shooters. At the same moment, we saw him place four pieces of artillery on the hill, so as to command the passage. A squadron of 250 cavalry just showed their heads above the hill, to the right of the battery, and the same number were seen to occupy a position on the left.

The 2nd battalion was ordered to deploy as skirmishers, and cross the river. As the line was about the middle of the river, the enemy opened his battery, and made the water fly with grape and round shot. Our artillery was now ordered to cross—it was unlimbered, pulled over by the men, and placed in counter battery on the enemy's side of the river. Our people, very brisk in firing, made the fire of the enemy wild and uncertain. Under this cover, the wagons and cattle were forced with great labor across the river, the bottom of which was quick sand.

Whilst this was going on, our rear was attacked by a very bold charge, and repulsed.

On the right bank of the river there was a natural banquette, breast high. Under this the line was deployed. To this accident of the ground is to be attributed the little loss we sustained from the enemy's artillery, which showered grape and round shot over our heads. In an hour and twenty minutes our baggage train had all crossed, the artillery of the enemy was silenced, and a charge made on the hill.

Half-way between the hill and river, the enemy made a furious charge on our left flank. At the same moment, our right was threatened. The 1st and 2nd battalions were thrown into squares, and after firing one or two rounds, drove off the enemy. The right wing was ordered to form a square, but seeing the enemy hesitate, the order was countermanded; the 1st battalion, which formed the right, was directed to rush for the hill, supposing that would be the contested point, but great was our surprise to find it abandoned.

The enemy pitched his camp on the hills in view, but when morning came, he was gone. We had no means of pursuit, and scarcely the power of locomotion, such was the wretched condition of our wagon train. The latter it was still deemed necessary to drag along for the purpose of feeding the garrison, intended to be left in the Ciudad de los Angeles, the report being that the enemy intended, if we reached that town, to burn and destroy every article of food. Distance 9.3 miles.

January 9. The grass was very short and young, and our cattle were not much recruited by the night's rest; we commenced our march leisurely, at 9 o'clock, over the "Mesa," a wide plain between the Rio San Gabriel and the Rio San Fernando.[148]

Scattering horsemen, and small reconnoitring parties, hung on our flanks. After marching five or six miles, we saw the enemy's line on our right, above the crest made by a deep indentation in the plain.

Here Flores addressed his men, and called on them to make one more charge; expressed his confidence in their ability to break our line; said that "yesterday he had been deceived in supposing that he was fighting soldiers."

We inclined a little to the left to avoid giving Flores the advantage of the ground to post his artillery; in other respects we continued our march on the Pueblo as if he were not in view.

When we were abreast of him, he opened his artillery at a long distance, and we continued our march without halting, except for a moment, to put a wounded man in the cart, and once to exchange a wounded mule, hitched to one of the guns.

As we advanced, Flores deployed his force, making a horse shoe in our front, and opened his nine-pounders on our right flank, and two smaller pieces on our front. The shot from the nine-pounders on our flank was so annoying that we halted to silence them. In about fifteen minutes this was done, and the order "forward" again given, when the enemy came down on our left flank in a scattering sort of charge; and notwithstanding the efforts of our officers to make their men hold their fire, they, as is usually the case under similar circumstances, delivered it whilst the Californias were yet about a hundred yards distant. This fire knocked many out of their saddles and checked them. A round of grape was then fired upon them, and they scattered. A charge was made simultaneously with this on our rear with about the same success. We all considered this as the beginning of the fight but it was the end of it. The Californians, the most expert horsemen in the world, stripped the dead horses on the field, without dismounting, and carried off most of their saddles, bridles, and all their dead and wounded on horseback to the hills to the right.

It was now about three o'clock, and the town, known to contain great quantities of wine and aguardiente, was four miles distant. From previous experience of the difficulty of controlling men when entering towns, it was determined to cross the river San Fernando, halt there for the night, and enter the town in the morning with the whole day before us. The distance to-day, 6.2 miles.

After we had pitched our camp, the enemy came down from the hills and 400 horsemen, with the four pieces of artillery, drew off towards the town, in order and regularity, whilst about sixty made a movement down the river, on our rear and left flank. This led us to suppose they were not yet whipped, as we thought, and that we should have a night attack.

January 10. Just as we had raised our camp, a flag of truce, borne by Mr. Celis, a Castilian, Mr. Workman, an Englishman, and Alvarado, the owner of the rancheria at the Alisos, was brought into camp. They proposed, on behalf of the Californians, to surrender their dear City of the Angels, provided we would respect property and persons. This was agreed to; but not altogether trusting to the honesty of General Flores, who had once broken his parole, we moved into the town in the same order we should have done if expecting an attack.

It was a wise precaution, for the streets were full of desperate and drunken fellows, who brandished their arms and saluted us with every term of reproach. The crest, overlooking the town, in rifle range was covered with horsemen, engaged in the same hospitable manner. One of them had on a dragoon's coat, stolen from the dead body of one of our soldiers after we had buried him at San Pasqual.

Our men marched steadily on, until crossing the ravine leading into the public square, when a fight took place amongst the Californians on the hill; one became disarmed, and to avoid death rolled down the hill towards us, his adversary pursuing and lancing him in the most cold-blooded manner. The man tumbling down the hill was supposed to be one of our vaqueros, and the cry of "rescue him" was raised. The crew of the Cyane, nearest the scene, at once, and without any orders, halted and gave the man that was lancing him a volley; strange to say, he did not fall. Almost at the same instant, but a little before it, the Californians from the hill did fire on the vaqueros. The rifles were then ordered to clear the hill, which a single fire effected, killing two of the enemy. We were now in possession of the town; great silence and mystery was observed by the Californians in regard to Flores; but we were given to understand that he had gone to fight the force from the north, drive them back, and then starve us out of the town. Towards the close of the day we learned very certainly that Flores, with 150 men, chiefly Sonorians and desperadoes of the country, had fled to Sonora, taking with him four or five hundred of the best horses and mules in the country, the property of his own friends. The silence of the Californians was now changed into deep and bitter curses upon Flores.

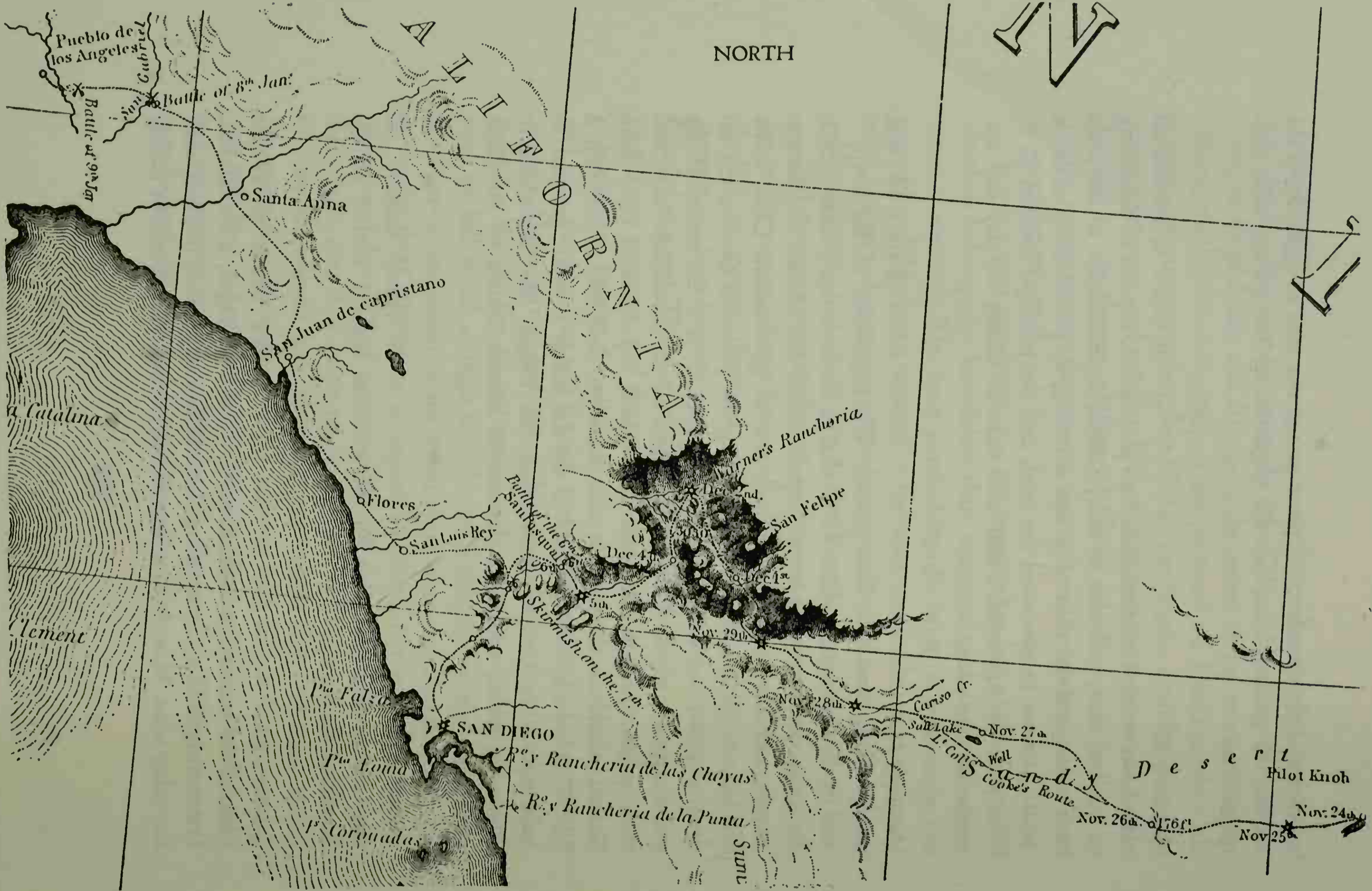
Some slight disorder took place among our men at night, from the facility of getting wine, but the vigilance of the officers soon suppressed it.

January 11. It rained in torrents all day. I was ordered to select a site, and place a fort, capable of containing a hundred men; with this in view, a rapid reconnoissance of the town was made, and the plan of a fort sketched, so placed as to enable a small garrison to command the town and the principal avenues to it. The plan was approved. Many men came in during the day and surrendered themselves.

January 12. I laid off the work, and, before night, broke the first ground. The population of the town,[149] and its dependencies, is about 3,000; that of the town itself, about 1,500; It is the centre of wealth and population of the Mexico Californian people, and has heretofore been the seat of government. Close under the base of the mountains, commanding the passes to Sonora, cut off from the north by the pass at San Barbara,[150] it is the centre of the military power of the Californians. Here all the revolutions have had their origin, and it is the point upon which any Mexican force from Sonora would be directed. It was therefore desirable to establish a fort,[151] which, in case of trouble, should enable a small garrison to hold out till aid might come from San Diego, San Francisco, or Monterey, places which are destined to become centres of American settlements.

January 13. It rained steadily all day, and nothing was done on the work; at night I worked on the details of the fort.

January 14. We drank to-day the wine of the country, manufactured by Don Luis Vigne, a Frenchman. It was truly delicious, resembling more the best description of Hock than any other wine. Many bottles were drunk leaving no headache or acidity


NORTH
CALIFORNIA
Pueblo de los Angeles
San Gabriel
Battle of 8th Jan.
Battle of 9th Jan
Santa Anna
San Juan de capristano
Catalina
Clement
Flores
San Luis Rey
Battle of the 6th San Pasqual
Dec 4th
5th
6th
Skirmish on the 7th
Warner's Rancheria
Dec 2nd.
San Felipe
Dec 1st
Nov. 29th
Nov. 28th
Cariso Cr.
Salt Lake
Nov. 27th
Well
Cooke's Route
Sandy Desert
Pilot Knob
Nov. 26th
Nov. 24th
Nov. 25th
SAN DIEGO
Pta. Falsa
Pta. Loma
Ro. y Rancheria de las Choyas
Ro. y Rancheria de la Punta
Is. Coronadas
Sumi
IV
V

November 22nd to January 10th, 1847.

on the stomach. We obtained, from the same gentleman, a profusion of grapes and luscious pears, the latter resembling in color and taste the Bergamot pears, but different in shape, being longer and larger.

January 15. The details to work on the fort were by companies. I sent to Captain Tilghman, who commanded on the hill, to detach one of the companies under his command to commence the work. He furnished, on the 16th, a company of artillery (seamen from the Congress) for the day's work, which they performed bravely, and gave me great hopes of success.

January 18, 19, and 20. I received special orders which separated me from the command, and the party of topographical engineers that had been so long under my orders.

The battles of the 6th December, and the 8th and 9th January, had forever broken the Mexican authority in California, and they were daily coming in, in large parties, to sue for peace, and every move indicated a sincere desire on the part of the more respectable portion of the Californians to yield without further struggle to the United States authorities; yet small parties of the more desperate and revengeful hung about the mountains and roads; refusing or hesitating to yield obedience to their leaders, who now, with great unanimity, determined to lay down their arms. General Flores, with a small force, was known to have taken the road to Sonora and it was believed he was on his way to that province, never to return to California.

Leaving General Kearny at San Juan de Capristano, on his return to San Diego, I took three men and pushed on for the latter place. Halting late in the evening at the deserted Indian rancheria of Santa Margarita, we broke open one of the Indian huts, and got some corn and pumpkins for our animals. When night came on, the number of insects about the hut, and the intolerable noise made by the wolves, kept us from sleep. The moon shone brightly, and about ten at night we saddled up to pursue our journey.

In this determination we were confirmed by the unexplained movement of several small parties of mounted Californians that reconnoitred our camp; a circumstance which afforded additional proof that some of the Californians were yet in arms, and led us very reasonably to the conclusion that our only safety was in changing our camp. We reached the mission of San Luis Rey, and found not a human being stirring. The immense pile of building, illuminated by the pale cold rays of the moon, stood out in bold relief on the dim horizon, a monument of the zeal of the indefatigable priests by whom it was built. Now untenanted and deserted, it offered no resting place for the weary and hungry, and we rode on, determined to halt at the first place where grass should be in abundance.

The road here divides into two branches; one leads to the west, by the rancheria of San Barnardo, the other directly to San Diego, over the high lands, running nearly parallel to the sea coast. The first is that by which we had marched on the Pueblo de los Angeles, fearing that the hills on the sea coast road would embarrass the movement of our military and ox-carts.

Without a guide, we had great difficulty in striking at night the trail leading over the mountains; but consulting the stars for our course, and relying upon the sagacity of my three men, who had passed most of their days in traversing untrodden regions, we jogged along, shivering with the cold air of the elevated hills.

About twelve, we came to a large patch of luxuriant grass, wet with dew. Upon this we loosened our animals and attempted to get a little sleep, but, in the absence of blankets or fire, the cold deprived us of repose, and the dawn of day found us again in our saddles.

The only habitation on the road from San Luis Rey to San Diego is a hut about half way, where there is a good spring. Its occupants had just returned from the wars, quite as hungry as we were. They had preceded us not more than twenty minutes, yet they had a fat bullock killed, and choice bits of flesh roasting before the fire. We outnumbered the party, and consequently received their hospitality, which was extended to us with a good deal of bon-hommie.

They conversed freely of the battles fought but a few days before, acknowledged their participating in them, and expressed themselves satisfied of the uselessness of farther resistance without aid from Mexico.

The fresh meat of a bullock is all that is required by the Californian for breakfast, dinner, and supper.

Bread, tea, and coffee are rarely, if ever, used, and even when within their reach, looked upon with indifference.

We very soon fell into their habits, and it is probable the troops in California, at this time, would not consider it an excessive hardship to make a campaign with no other stores in the commissariat than a plentiful supply of fresh beef. The white teeth of the Californians, and the blood tingling in the cheeks of their olive colored faces would seem to prove this beef to be a very healthy diet.

The advantages in the movement of troops that are contented with this kind of subsistence is very great, enabling them to move without wagons, and with no other care for the morrow than herding the animals intended for food.

Our host was so well pleased with the manner in which we acquitted ourselves at his rude repast, that, forgetting old animosities, he saddled up his jaded horse, and piloted us for five or six miles, until we reached the broad trail leading to the Solidad.

About midday we reached San Diego, and next morning, taking leave of my men and the animals that had done us such good service, I embarked on board the prize brig Malek Adhel, commanded by Lieutenant Schenck, of the navy, and prepared to take my leave of Upper or Alta California. Before doing so, however, I may venture upon a few general remarks, based upon personal observations, upon the topography, climate, and products of that portion of the country not covered by my survey, or that of others. These observations were made after I had become separated from my assistants and instruments,[152] my mind being engrossed with other subjects. The information contained in them is, therefore, less precise than that contained in other portions of my journal.

The region extending from the head of the Gulf of California to the parallel of the Pueblo, or Ciudad de los Angeles, is the only portion not heretofore covered by my own notes and journal, or by the notes and journals of other scientific expeditions fitted out by the United States.

The journals and published accounts of these several expeditions combined, will give definite ideas of all those portions of California susceptible of cultivation or settlement. From this remark is to be excepted the vast basin watered by the Colorado, and the country lying between that river and the range of Cordilleras, represented as running east of the Tulare lakes, and south of the parallel of 36°, and the country between the Colorado and Gila rivers.

Of these regions nothing is known except from the reports of trappers, and the speculations of geologists. As far as these accounts go, all concur in representing it as a waste of sand and rock, unadorned with vegetation, poorly watered, and unfit, it is believed, for any of the useful purposes of life. A glance at the map will show what an immense area is embraced in these boundaries; and, notwithstanding the oral accounts in regard to it, it is difficult to bring the mind to the belief in the existence of such a sea of waste and desert; when every other grand division of the earth presents some prominent feature in the economy of nature, administering to the wants of man. Possibly this unexplored region may be filled with valuable minerals.

I have alluded, elsewhere, to the population of this country, the savage character of which is another obstacle to its exploration, and has tended to veil in mystery its true character and resources.

Alta California, between the 31st and 34th parallels of latitude, presents to the eastern man, accustomed to navigable rivers and broad estuaries of the ocean topographical features of a very unusual character.

Two chains of mountains traverse the country in a direction nearly parallel to the sea coast, slightly converging towards each other, and finally uniting near the parallel of 32°. Here they form the promontory of Lower California, extending its entire length, and terminating abruptly in the ocean at Cape San Lucas.

The first chain (that nearest the coast) may be considered a steppe of the second or interior range of mountains. It impinges on the coast at three different points, Santa Barbara, San Juan de Capristano, and between San Luis Rey and San Diego—at the first two places with so much boldness as to make it necessary to conduct the road along the margin of the sea, between the lines of high and low water mark, so that both Santa Barbara and San Juan present points worthy of consideration to the military commandant charged with the defence of that country.

Between the first and second ranges of mountains there is a valley, traversed by a good road, leading directly from the great desert to the Pueblo de los Angeles, and a defending force would meet its adversary to the greatest advantage at Cariso Creek, the termination of the "jornada" across the desert. The description and locality of Cariso Creek has already been given.

The second or principal range of mountains lies at no great distance from the first, and the valley between offers some arable land. The distance between the first range and the sea coast varies from 1 to 20 or 30 miles. The surface covered with vegetation, though small, is difficult to estimate; and perhaps it is unimportant that an estimate should be made, since the productiveness of these regions depends on other considerations than smoothness of surface and character of soil. The rains cannot be relied upon, and the tiller of the earth depends upon irrigation from the mountain streams for his crops. The extent of ground capable of tillage is thus reduced to very narrow limits, easy of computation. A knowledge of the water courses, their fall, volume and extent, and the quantity of lands on their margin, within the level of these waters, are the data upon which the computations must be based.

Taking this as a guide, an inspection of the accompanying map will give a general idea of the extent of arable ground, sufficiently correct for all practical purposes; but, in candor it should be said, that many streams laid down in it disappear in the sand, while the rocky cliffs, forming the banks of others, render irrigation impracticable. The scale upon which the map is projected is too small to represent these accidents of the ground.

Where irrigation can be had in this country, the produce of the soil is abundant beyond description. All the grains and fruits of the temperate zones, and many of those of the tropical, flourish luxuriantly.

Descending from the heights of San Barnardo to the Pacific, one meets every degree of temperature. Near the coast, the winds prevailing from the southwest in winter, and from the northwest in summer, produce a great uniformity of temperature, and the climate is perhaps unsurpassed in salubrity. With the exception of a very few cases of ague and fever of a mild type, sickness is unknown.

The season of the year at which we visited the country was unfavorable to obtaining a knowledge of its botany. The vegetation, mostly deciduous, had gone to decay, and no flowers nor seeds were collected. The country generally is entirely destitute of trees. Along the principal range of mountains are a few live oaks, sycamore and pine; now and then, but very rarely, the sycamore and cotton-wood occur in the champaign country, immediately on the margins of the streams.

Wild oats[153] everywhere cover the surface of the hills, and these, with the wild mustard and carrots, furnish good pasturage to the immense herds of cattle which form the staple of California.

Of the many fruits capable of being produced with success, by culture and irrigation, the grape is perhaps that which is brought nearest to perfection.

Men experienced in growing it, and Europeans, pronounce the soil and climate of this portion of California unequalled for the quality of the wine expressed from it.

We sailed from San Diego on the 25th of January, and coasted along the rock and barren shores of Lower California. The information in reference to this country, which it was in my power to obtain, is not so precise as that which might be derived from an actual survey, and I have therefore embodied it in the appendix.

I have the honor to be, very respectfully, yours,

W. H. EMORY

Editor's Notes

[1] The site of Bent's Fort was slightly northeast of the modern town of La Junta, Colo. From that point the Army of the West continued southwest in a course as direct as possible towards the location of the present town of Raton, N. M.

[2] *Sesleria dactyloides:* The famous buffalo grass of the Great Plains.

[3] The plant referred to is the common elkhorn cactus (*Opuntia arborescens*) or cholla, as it is now called in both Spanish and English. The cylindrical joints, however, are about three inches in circumference, not diameter. To the traveler going southwest, this cactus first becomes conspicuous near Bloom, Colo.

[4] Wattahyah: They are now known as the Spanish Peaks. In the *Guidebook of the Western United States,* a Government publication, they are called Wahatoya. The Indian word means "Breasts of the World."

[5] Purgatoire: The mountain men called the stream simply the Picket Wire, a name which still persists.

[6] Here, as in many other places, Emory uses the scientific name as a substitute for the English. *Salix* is the Latin name for the willow genus. Angelica is a species of wild parsley, which grows in the mountains from Montana to New Mexico.

[7] Raton: For wagon trains the Raton Pass was always the most difficult part, by far, of the entire Santa Fe Trail. In 1846, some of the wagons were drawn up and let down by ropes.

[8] Grama: This was the famous blue grama, now called by botanists *Bouteloua gracilis.* It is the most important range grass of the Southwest. When ripe it is easily recognizable by its graceful, sickle-shaped head.

[9] Trap-dyke: Trap rock, so often mentioned by Emory, is a term applied rather loosely to various dark-colored igneous rocks, such as basalt.

[10] Balsam Cop.: An abbreviation for *Copaiva,* a diuretic medicine then in common use amoung army doctors.

[11] Moro: The "Moro town" and river are properly spelled Mora. The word means, in Spanish, "mulberry." but there is evidence that the name applies not to the tree but to a Spanish-American family.

[12] The Vegas: Literally "The Meadows," in Spanish. The reference is to the New Mexican town of Las Vegas and its pleasant surroundings.

[13] The hamlet in the valley of the Mora, the first seen in more than seven hundred miles, was Watrous, N. M.

[14] Malva: The plants noted on the high plains near Las Vegas were a mallow, some species of wild geranium, wild morning glory, and the *Bartonia,* a rough weed now classified as a *Mentzelia* (Blazing star).

[15] Tacolote: Since the Spanish *Te-* has the sound of the English *Ta-* or *Tay-*, Emory is here reproducing the Spanish word phonetically. The practice is common not only in the "Notes," but in the writings of other early American travelers. Tecolote means "owl."

[16] The stratum is not red earth but stone, a part of the famous Rocky Mountain "red beds."

[17] The reference is doubtless to the Texas-Santa Fe expedition of 1841. The Texans were disarmed by General Armijo and then sent southward to the authorities in Mexico, as Lieutenant Pike had been before them. They were treated with extreme cruelty.

[18] *Estuffa:* The word is correctly spelled estufa (Span. stove, hothouse). It signifies the subterranean chamber (now more commonly called the *kiva*) in which the secret religious ceremonies of the pueblo are performed. To this day in the pueblos the Indians permit no white men to witness the rites or even approach the entrance of the kiva. Lieut. J. W. Abert, one of Emory's assistants, visited the Pecos pueblo on Sept. 26 of the same year. He speaks of the many curious legends repeated about the Indians there, mentions their perpetual fire, and then adds a bizarre touch lacking in Emory's account. In his *Report* he writes: "In their temples they were said to keep an immense serpent, to which they sacrificed human victims." Later on Abert met a man who claimed to have seen the perpetual fire, though not the serpent.

[19] In Spanish the full name of the famous stream was Rio Grande del Norte, the Great River of the North. Americans nowadays call it the Rio Grande—with the final "e" sounded regularly in New Mexico, less frequently in Texas.

[20] Passo: A common misspelling for Paso. The name refers not to the American city El Paso on the north side of the river in the Pass of the North, but to the Mexican city now called Juarez, which lies on the opposite bank.

[21] Taos: Between the actual writing of his "Notes" and their appearance in print Emory had time to add the following significant footnote: "Since this was written, the massacre of the excellent Governor Bent has taken place in Taos." Then he adds, more in sorrow than in anger, "It proves the profound duplicity of this race." The point is well taken, yet he might have said justly that in duplicity no race excels the red, unless it be the white—or the yellow.

[22] Navajoes: The correct spelling is either Navajos or Navahos. Other Spanish names misspelled by Emory farther on are San Felipe ("San Felippe"), Bernalillo ("Bernallilo") Sandoval ("Sandival"), Sandia ("Zandia"), Padilla ("Perdilla"), Isleta ("Isoletta"), Socorro ("Socoro"), Cebolleta ("Ciboletta"), La Jolla ("La Lloya" or "La Joya"), Polvadera ("Pulvidera"), etc.

[23] Emory was puzzled by the ceremonies and prayers ("the incantations") of the Mass at Santa Fe. The sermon was omitted that day—and for an understandable reason, doubtless; a sanctus bell was rung at the Elevation as always; and since the musicians appear to have been strumming chords on the guitar instead of playing the melody, it is easy to believe that the visitor could have been mistaken about the fandango tunes. Many of the "most miserable paintings and figures" have since been bought in New Mexico by collectors who saw in them notable specimens of primitive art. Museums, in fact, have been among the most assiduous purchasers.

[24] The "mud bricks," sun-dried, were adobe, the building material now favored by the most sophisticated Americans in the Southwest.

[25] Southeastern: A translator's mistake for southwestern, as a glance at the map makes clear. The information here given about the whole question of population is open to doubt. Emory is passing on information taken by Abert from an official statement by Governor Martinez in the middle of the year 1844, which is probably

inaccurate. Barreiro's *Ojeada sobre Nuevo Mexico* says that the first census of the country was taken by the military commandant, Col. Don Antonio Narvona in 1827. There were then 43,433 inhabitants. Eleven years later (1840) a second census was taken by Governor Manuel Armijo, which showed a total of 55,403. This would seem to be the one mentioned by Emory. On June 17, 1844, Governor Martinez announced that the population "according to statistics" is 100,064—even though his figures do not amount to that total. Like some unprecedented increases estimated for various American cities ahead of the 1950 census, the Governor's count leaves reason for some skepticism. As if to clinch the argument against him, the U. S. census of 1850 showed that New Mexico had a population of 61,000.

[26] A question at once arises here as to the authentic number and importance of the American caravans to which Emory makes reference.

[27] Ephedra: A genus of plants called by the native people "popotillo" or "cañatillo." It is an odd-looking, leafless desert shrub, whose branches appear to be made of green wire. Actually it belongs to the great pine family. *Diotis* is the plant now called by American ranchmen, appropriately enough, "winter-fat." *Hendecandra texensis* was a new spurge which had been described only five years previously by a German botanist, Klotzsch.

[28] *Capilla:* Emory here uses the Spanish word for chapel.

[29] The names Rivéra and La Ford do not occur in the roster of known martyrs, nor are they listed among the Franciscan missionaries who labored to establish the Church in New Mexico.

[30] Many of the great Conestoga wagons used on the Santa Fe Trail were made in Pittsburgh, where fine glass was also being manufactured at the time.

[31] It is noteworthy that this priest, as well as the one met at Santo Domingo three days earlier, had come under American influence. Such well-disposed leaders may help to explain the attitude of the native people toward the American republic and its soldiers.

[32] On the proper date the villagers were observing the Birthday of the Blessed Virgin with an outdoor procession.

[33] Coona: *La Cuna* is a well-known folk dance.

[34] Vernal: The word has nothing to do with spring. A better spelling would be Bernal—which, however, would not change its Spanish pronunciation.

[35] The central part of New Mexico had at that time been mapped—after a fashion. But a copy of the map was unobtainable. This graphic touch helps to explain the extraordinary ignorance of the native people regarding their country.

[36] *Obione* is the four-winged saltbush, now known among botanists as *Atriplex canescens;* the *Franseria* is often called ragweed, although it is distinct from the eastern plant of the same name.

[37] Erythera: The *Erythraea* appears to have been a species of centaury first described only the year before.

[38] Zequias: The Spanish word for irrigation ditch. Correct spelling: *acequia.* It was generally misspelled by the American soldiers.

[39] Emory appears to indicate here the rather rare, alkali-tolerant plant now called pickleweed (*Allenrolfea*). At this point in his narrative, as well as in various others, he later on added to his list of plants—apparently as names and classifications were received from Professor Torrey of Princeton. In such places the Senate document, the text here followed, is somewhat less detailed than the House document which was printed a few months later.

[40] The *Riddellia* is a late-summer composite with persistent flowers. Paga-paga is apparently the Indian name for a species of pigweed not now identifiable. Chamisa

is a name applied to more than one kind of shrub. Here it probably refers to the rabbit brush (*Chrysothamnus*), which at that time of year would be a magnificent mass of golden bloom.

[41] The imposing range which Emory calls the Sierra Grande is now very appropriately named the Sandia (watermelon) Mountain. A few miles northeast of Albuquerque it towers more than 10,000 feet into the sky. A stratum of light-colored sedimentary rocks overlies a gigantic mass of red granite, thus suggesting a melon enclosed by its rind.

[42] Puerco: The Pecos River is meant. Escudero's map shows that as late as 1848 the stream was called the Pecos or the Puerco. The latter name is unfortunate because of confusion with the Puerco which lies west of the Rio Grande.

[43] Camanches: The regular spelling is Comanches.

[44] Lamitas appears on modern maps as Lemitar.

[45] *Bois de vache* is a French expression of the plains for dried cow dung. The term "buffalo chips" means the same.

[46] Lescadron: An error for Sierra Ladrones—i.e., in folk usage, "Horsethief Mountain."

[47] *Manzanas* should be *Manzano* (apple), the name of the southern extension of the Sandia Mountains; and, in addition, of a native village on their eastern flank. Into this locality the Franciscan padres, in very early times, introduced apple trees.

[48] Near Socorro, N. M., the party was entering the northern limits of the famous creosote bush (Span. *hediondilla*). It was then new to the scientific world. Except for a day or two in the vicinity of the Santa Rita copper mine they would thenceforth seldom be out of sight of the plant until they approached the California Coast Range. Although it has various names, both common and scientific, the sufficient designation for all who know it is simply creosote bush. Contemporary botanists have returned to the old generic name *Larrea*.

[49] *Arriero:* A mule-driver.

[50] Carson: This was the great scout and frontiersman Kit Carson, whose biography may readily be found in standard reference books.

[51] Puerco: Apparently the range now called Sierra Caballo is meant.

[52] At this point Emory adds a footnote calling the reader's attention to the wonderful difference between the readings of the wet and the dry bulb thermometers. The variation indicates the remarkable dryness of the atmosphere.

[53] The so-called white cedars were alligator junipers, whose range the party was now entering. The bark, often almost white, splits into small squares which suggest a checkerboard—a fact which gives the tree another of its common names. The *Cevallia* is another plant which lacks a common name.

[54] *Jornado*: The name is *Jornada del Muerto*, Deadman's Journey. It was the most dreaded stretch of the long trek between Santa Fe and the interior of Old Mexico. "Journey of Death," a common mistranslation of the phrase, possibly comes closer to its meaning. The Jornada is an ill-defined tract east of the Rio Grande, flanked by the San Andreas Mountains. It extends from Socorro County southward into Dona Ana County, N. M. Near its northern margin the first atomic bomb was detonated on the morning of July 16, 1945.

[55] Strictly speaking, the name mesquite (mezquite) refers to only one plant, the *Prosopis glandulosa* (Torr.); but it was loosely applied by early travelers to several of the thorny desert shrubs. The "shrub growing in the beds of all deserted rivers" was the tamarisk, a Mediterranean species introduced by the Spaniards. Though not an evergreen, it is also called salt cedar. It very early escaped from cultivation. *Tessa-*

ria borealis was the scientific name bestowed by Professor Torrey on a shrub collected by Emory on this expedition. The common name is arrow-wood.

[56] "Game . . . is almost extinct": this misstatement is perhaps a little less odd than it seems. The party up to that time had seen only the parts of New Mexico close to the well-traveled Santa Fe Trail and those adjacent to the Rio Grande, where the presence of man had made itself felt for two centuries or more. Yet on the plains travelers constantly saw bands of antelope. In the mountain forests that flanked Emory's course, grizzly bear were so numerous generations later as to constitute a serious menace to the cattle industry. Even today some of the national forests are badly overstocked with deer. In Emory's time bands of elk numbering hundreds, or even thousands, ranged the southwestern part of the state in the vicinity of Elk Mountain; and the native people used to send whole wagon trains to the Staked Plains country to bring home supplies of buffalo meat.

[57] In the later printing (*Exec. Doc. No. 41*) is added: "Its name, Paloma. (Pigeon Creek.)" The addition helps to clarify the route. They had left the Rio Grande at a point very near the modern town of Hot Springs (now Truth or Consequences), N. M., and were proceeding in a southwesterly direction across the great bench or tableland that slopes out from the Mimbres (Black) Range.

[58] This was designated as a new species and named by Professor Torrey after its discoverer the *Quercus emoryi.*

[59] Mimbres Mountains: By persons lacking in both imagination and color sense, they have been re-named the Black Range and are now so marked on maps.

[60] The common name for the genus *Cercocarpus* is mountain mahogany. Several species of it are found in the foothill country of New Mexico.

[61] A printer's slip. The correct reading is 32 degrees, 11 minutes.

[62] The copper mine, a famous landmark all through early Southwestern history, is at Santa Rita, N. M. At that time it was guarded by a triangular Spanish fort, which Capt. A. R. Johnston sketched in passing. It is now an open pit mine of gigantic size.

[63] This mescal or century plant is the *Agave parryi* (Engel.). It was a favorite item of food among the Mescalero Apaches, who took their name from it.

[64] The *Dasylirion* still lacks a common English name. It is usually called by its Spanish name *sotol.*

[65] San Lucia: The name is an error. Capt. A. R. Johnston, who kept a parallel day-by-day record, calls it almost correctly the San Vicentia Spring. It should be San Vicente, which was also the name of the village which later grew up beside it. Shortly after 1870 the name was changed by American miners to Silver City, which it has borne ever since. The town's patron saint, however, is still commemorated by the name of St. Vincent's Church. There is also another lapse in accuracy here. The divide mentioned a few lines farther on is the Continental Divide, which is three miles west, not of the camp near Santa Rita, but of Silver City. Emory, of course, must have noted that the flow of San Vicente Spring there descends the *eastern* slope.

[66] Night Creek, the name which Emory bestowed, was long ago superseded by Rio Mangas, in honor of the famed Apache chieftain who, in 1846, met the Americans there.

[67] Red Sleeve. The name of the chief is, for no discoverable reason, always singular in English, plural in Spanish. The name of the stream on which he met General Kearny is never *Manga,* but always *Mangas* (Sleeves). To complicate matters still more, the adjective *Colorado,* as it is spelled in the best sources, is singular. It seems fair to conclude that the Indian's name was Mangas Colorado, and that it was ungrammatical.

[68] The laws of Montezuma: Probably Emory is a bit too romantic here. Captain Johnston's account quotes the Indian as saying, "We fight for plunder"—which seems somewhat closer to the observed facts.

[69] Often called also the scaled quail *(Callipepla squamata).*

[70] Pala may be a corruption of palo verde; but that tree is not found as far east as New Mexico. The larch does not grow in the arid Southwest.

[71] The appropriate name has persisted ever since. Steeple Rock is visible from the 70-80 Highway west of Lordsburg, N. M.

[72] Puebla: The name should be Pueblo.

[73] Dr. G. Engelmann, of St. Louis, who classified Emory's cactus specimens, named this barrel cactus *Echinocactus emoryi* "after its zealous discoverer, who found leisure to do so much for the advancement of our knowledge of the wild countries traversed by him." But later on Britton and Rose ungraciously changed the name to *Ferocactus covillei* in honor of a Government botanist.

[74] The reader is warned of a switch of names here. Emory's map makes clear that by the Prieto he means the San Francisco of modern maps; by the Azul, Eagle Creek; by the San Carlos, Bonita Creek. The stream which empties into the Gila above Coolidge Dam, although called by both Emory and Johnston the San Francisco, is now always called the San Carlos. In the wild, unknown country which Arizona then was nomenclature was sketchy and still unsettled.

[75] In the remote back country north of the Gila, home of the San Carlos Apaches, where one must go either on foot or on horseback, the traveler still finds these smoke-blackened rock caves, rude shelters of sheepherders, littered with skins, ropes, pack saddles, cooking pots, etc.

[76] The three streams enter the Gila a little to the east of Safford, Ariz. The San Francisco (as now named) has a drainage basin of nearly 3,000 square miles, Eagle Creek of 639, Bonita Creek of 366. Except in flash floods the flow of all three is small.

[77] The "green-barked acacia" is the name applied farther on in the "Notes" to the palo verde tree of the desert. But they were not yet within the range of that species. A shrub easily confused with it is the *Canotia* or staff tree, which is probably meant here.

[78] Emory, although an engineer, had a cavalryman's eye for pasturage. His remarks on the grasses help to correct present day impressions formed from the badly overgrazed condition of the country. Great areas that are now almost worthless for grazing were formerly mantled with rich, nutritious grasses.

[79] These barren, treeless mountains are now mapped as the Peloncillos.

[80] Mount Graham, southwest of Safford, had received its name but a short time before. It towers to an altitude of 10,500 feet, a vertical mile and a half above the desert out of which it rises. On its summit stands a dense, chill Canadian forest of firs and spruces different from any that Emory encountered on his entire journey from the Great Plains to the Pacific.

The valley east of the peak is that of the San Simón, which, within a few years, was to become a part of the international boundary between the United States and Mexico. Today so great is the man-caused erosion along its course that even a cavalry party could scarcely effect a crossing.

[81] San Bernardino, in 1846, was the ruined settlement where Colonel Cooke encountered the famous wild cattle. He reported that they were "as wild and more dangerous than buffalo." Fronteras, as the name indicates, was a frontier Mexican outpost used in early campaigns against the Apaches.

[82] This editor found juniper (cedar) posts at the same ruin, still in position

nearly one hundred years after Emory saw them. The reddish wood had long before lost its characteristic fragrance, but after several centuries it was still undecayed.

[83] The ruins along the flood plain of the Gila from this point westward for many miles have been carefully studied by archaeologists, and much has been written about them. Captain Johnston, a member of the expedition, sketched many of the sherds. The finest ware is that which is called Gila Polychrome, a beautiful red-black-and-cream pottery, which, after being washed, looks as bright today as when it was fired centuries ago.

[84] Mt. Turnbull is a remarkably sharp-pointed peak which serves as a landmark for many leagues to travelers either on the ground or in the air.

[85] Wild hogs: Peccaries. The animal is now very rare in the Southwest. A commoner name is the Mexican *jabalina,* a word which, however, is seldom found in dictionaries.

[86] This is not the San Francisco of modern maps, but the San Carlos, which flows into the reservoir of the same name.

[87] Johnson: This oft-repeated story, which appears in various forms, probably has a core of truth. But in time it varies through half a century, and in locale from Sonora to the Santa Rita copper mine.

[88] This was the sahuaro or giant cactus *(Cereus giganteus).* Emory later on calls it the *pitahaya.* The traveler going westward across Arizona should notice it first a little before reaching the Coolidge Dam.

[89] Probably the jojoba or goat nut *(Simmondsia chinensis).*

[90] The correct form of this name seems to be Pinaleños—i.e., "Those who live in the pine forests."

[91] The soil along the San Pedro is extremely friable, and "the deep incisions" noted by Emory in the locality have since been magnified by overgrazing, etc., into some of the most remarkable examples of man-caused erosion to be found in the entire Southwest. The dry creek by which they approached the Gila seems to have been the Aravaipa.

[92] On early western expeditions army officers often rode mules, which, when going became difficult, were more sure-footed and much less excitable than horses.

[93] The Gila emerges from the mountains not far from the modern town of Florence, Ariz. The wide plain mentioned is a part of what botanists call the arboreal desert of southern Arizona.

[94] Pimos: The modern spelling is Pimas. The neighboring tribe is the Maricopa, not Maricopo. Albert Gallatin requested Emory's permission to transmit a part of his notes on these tribes to the Ethnological Society of New York for publication.

[95] The "mud house" is the famous Casa Grande, now a national monument. It is situated near the modern village of the same name. The great ruin has long been a favorite object of study by archaeologists. The first white man to see it, so far as historians know, was the Jesuit, Father Kino. He wrote a description of it in 1694.

[96] The "long-sought bird" is quite clearly a phainopepla, one of the silky flycatchers. No other bird resembles it.

[97] Col. Philip St. George Cooke's Mormon Battalion, which followed General Kearny's expedition through the Pima village and on westward shortly afterwards.

[98] San Francisco: More confusion in names. On October 27, 1846, the party had already passed the place where the San Francisco—on modern maps, the San Carlos—joins not the Salt but the Gila proper. The Verde is clearly the stream indicated here. It must be kept in mind that in what has since become known as Arizona the nomenclature was then sketchy, and that various names have been changed.

[99] The modern town of Gila Bend marks the elbow in the river's course.

[100] The ruin was perhaps the one known nowadays as Pueblo Grande, on the east side of Phoenix. It is now maintained as a museum. The archaeologist O. S. Halseth states that, along the Salt River, more than twenty village ruins with similar central structures of adobe have been discovered.

[101] The plant cannot now be identified by the name "inga."

[102] The type of mirage that distorts distant mountains is a rare and remarkable phenomenon of chilly winter mornings. Probably most Southwesterners have never witnessed one. That the one recorded here was a perfect representation of the capitol in Washington, except to a fanciful eye, is hard to believe; that it remained perfect for twenty minutes is still harder.

[103] Latitude: By a printer's error it is given as 35 degrees instead of the correct 33 degrees.

[104] The cane is called in Spanish *carrizo*. The scientific name, as used by Torrey, is *Arundo phragmites*.

[105] The lesser snow goose is known in the West as the white brant.

[106] Monterey: General Kearny's ultimate objective gives the reader a hint as to the thorough-going nature of his expedition.

[107] Torrey's list gives no clue to this "myrtle" plant. In the same day's entry Emory's mention of a rock "covered with fir" is certainly an error. The genus would be entirely out of its range in that locality.

[108] Goat's Spur: A picture in some old editions of the "Notes" shows the animal as a Rocky Mountain goat, which it could not have been. The Mexican variety of mountain sheep, to which the beast belonged, is still found in a few inaccessible localities of the Southwest.

[109] "Abruptly from the plains." To a traveler from the East a general absence of outwash slopes is one of the most noticeable geological characteristics of the desert ranges.

[110] General José Castro had been military commandant of California, with headquarters at Monterey. Dissension had arisen between him and the civil governor, Don Andres Pico. About the same time, he clashed with Col. Frémont, who was in command of a band of irregular American troops in California. As a result of obscure developments which culminated in the Bear Flag outbreak, Castro was expelled from the country. He took refuge in Sonora.

[111] Spanish church. This was the ruin of the Purísima Concepción mission, founded, not by Kino the Jesuit but several generations after him, by Garcés the Franciscan. In July, 1781, the year after its founding, the Indians rose in violent insurrection, wiped out the settlement, massacred the settlers, along with Padre Garcés and another priest. The spot is now marked by a statue of a missionary and some of his Indian charges.

[112] Coyotaros, Cochinears, etc. Emory's synonyms give sufficient explanation for these obscure tribal names.

[113] Alta is a mistake for Altar, the town in Sonora. A few pages farther on it is spelled Alter.

[114] A revolution had already taken place in California. At that time the country was so loosely bound to Mexico that it might accurately be described as a sort of independent republic. Its population included some eight hundred Americans, who naturally did nothing to strengthen ties with the mother country. At a favorable time they fomented a revolution. The native reaction to it was this counter revolution.

[115] Captain Flores: Gen. José M. Flores was the Mexican commander charged with the defense of Los Angeles. In a letter to the American commander on Jan. 4, 1847, he signs himself "Governor and Captain general of the department of Cali-

fornia" although his authority had previously appeared to be only temporary. After his defeat, Flores (as the Americans learned on January 10), taking with him several hundred of the best horses available and about 150 followers, stole away to Sonora.

[116] Puebla: Elsewhere written Pueblo. An abbreviation of the long, sonorous Spanish name for the City of the Angels.

[117] Lazo: The common spelling is lasso. It means a lariat. (Span. *la reata.*) The quoted proverb shows that Mexican and Californian were no longer synonymous terms.

[118] North Mexico: Emory does not mention Arizona by name anywhere in his "Notes." At that date the ill-defined province of Nuevo Mexico extended all the way from Texas to California.

[119] The admission of Texas, late in 1845, as a slave-holding state added fresh excitement to the great question that was already troubling the Government at Washington. As Emory foresaw, negro slavery never existed within the vast tract that lay between the Rio Grande and the Pacific.

[120] The names of all five tributaries have since been switched or changed. Today's traveler taking them downstream in order finds the Prieto now called the San Francisco; and the Azul, the Carlos, and the San Francisco are respectively Eagle Creek, Bonita Creek, and the San Carlos. The Salinas is the Salt.

Emory distinguishes between this region and New Mexico proper, yet it is to be noted that he does not employ the name Arizona.

[121] Destitute of forest trees: It seems strange that the beaver trappers, scouts, and especially the guides like Carson could have permitted Emory to form such a totally erroneous impression. At that time millions of acres both in Arizona and New Mexico proper were occupied, as they are today, by forests of pine, fir, and spruce. The forests occur, however, only on the higher mountains, which Emory's expedition nowhere traversed.

[122] Soones: This appears to be merely a phonetic spelling for Zuñis. The location of the Zuñi people was at that time not well known, and by some travelers they were reputed to be living on the Gila, by others somewhere along the Puerco.

[123] Emory, cautious scientist, now concedes that they are at last in country which can rightfully be called desert. At that time rash observers felt that from central Kansas on westward they were adventurers on "The Great American Desert." The sandhills west of Yuma which occupy only a few square leagues are the only part of the desert which squares with the ignorant traveler's mental picture of drifting dunes.

[124] Destitute of vegetation: The increasing harshness of the desert is indicated not so much by the appearance of new species as by the dwarfed size of those already present, and the increasing amount of bare ground on which nothing at all grows.

On November 27 and 28 Emory's line of march crossed a tract which, in spite of its worthless appearance at the time, was destined to become one of the richest agricultural areas of the world—Imperial Valley.

[125] *Aristida:* Needle grass, which is almost worthless for grazing animals. *Oenothera* refers to the evening primrose genus, of which there are many species.

[126] They were now at the gap through which Carrizo ("Cariso") Creek issues from the mountains. Emory mentioned later its strategic importance in the defence of the country against an enemy approaching from Mexico.

[127] Spinelas: One may well wonder where Emory found this word. Apparently it means the same as the English words spinel and spinelle—a kind of rock crystal. Spinel is found frequently "as rolled pebbles in stream sands where it has been preserved on account of its hardness" (Dana's *Manual*).

Muscle is, of course, merely a misspelling for mussel.

[128] *Palafoxia* is a composite plant with rose-purple flowers. *Encelia farinosa* is a showy yellow composite with grey-green leaves which look as if they had been dusted with flour; hence the specific name. The *Simsia* which they collected on this date (November 28) was a rayless, and, as Dr. Torrey thought, probably a new species of the genus. The plant is a branching shrub.

[129] The cabbage trees were palms, but of a different species from those known to the Florida campaigners.

[130] The ocotillo is the most bizarre and splendid shrub of the desert. It has been classified in various ways and given various scientific and common names. The accepted scientific name is now *Fouquieria splendens*. It is not rare but common along the Gila; and, before reaching California, Emory must have seen it many times without giving heed to it. Through much of the year it stands on the desert, leafless and dead-looking, but when it flaunts its flame of scarlet blossoms, nobody can overlook it. Although the type specimen was collected by Wislizenus on the Jornada del Muerto in 1846, it was not described and named for botanists until 1848.

[131] This savage, grotesque plant scarcely occurs in a wild state north of Mexico, but when introduced in parks and gardens it grows well from southern New Mexico to California.

[132] The Spanish spelling is *estafiata*. The plant is an artemisia or sage.

[133] The location is now designated by the name Warner Springs.

[134] The missions, both in California and New Mexico, had been founded, operated, and owned by the Franciscan Order, and were, therefore, free from episcopal interference. For a long time the bishop of Durango contended with the Franciscans for control, he maintaining, it is claimed, that the missions should become self-supporting parishes served by secular clergy. Later on when the Mexican Government wrested away control and ownership from the Order, the change was known as the secularization of the missions.

A federal law of April 16, 1834, called for the secularization of all the missions within the space of four months. The rate at which the process went ahead is not known, but clearly it continued through several years.

On the surface the secularization might appear to rest upon a religious quarrel. But deeper questions were involved. The Mexican Government, in 1833, removed civil coercion from the collection of Church tithes, and at the same time passed a decree which amounted to confiscation of the missions and their wealth. Grafting politicians, as Emory noted on January 2, 1846, saw to it that great Church properties passed into the hands of relatives and favorites by sales that, as he says, were "undoubtedly fraudulent."

[135] In the great chain of California missions there was none which bore the name Saint Isabel.

[136] Signor: Emory was thinking in Italian rather than Spanish. The proper form of the title is *Señor*.

[137] Johnston: This was Capt. Abraham R. Johnston. The final entry in his Journal is for December 4, 1846. It concludes with these words: "We heard of a party of Californians of 80 men encamped at a distance from this; but the informant varied from 16 to 30 miles in his accounts, rendering it too uncertain to make a dash on them in a dark, stormy night; so we slept till morning."

Immediately below is General Kearny's statement: "The foregoing is a literal copy of the rough notes of my late aide-de-camp, Captain A. R. Johnston, first dragoons, who was killed at daybreak on the sixth of December, 1846, in an action with the Californians at San Pasqual."

[138] Pico: Don Andres Pico commanded the Mexican forces at the battle of San

Pasqual. From Emory's account the action would appear a victory for Kearny's force; yet some other writers—possibly taking a partisan view under the influence of Frémont, who hated Kearny—have maintained that the American commander blundered and was defeated. On January 12, 1847, Frémont, although he had no claim to the authority to make peace, received the surrender of Pico.

[139] Solidad: The correct spelling is *Soledad,* which means solitude.

[140] The San Diego Mission was founded in 1769, the first in the chain. By 1828 it was said to have in its charge 1,500 Indians, and to be producing annually more than 6,000 bushels of wheat, oats, and barley. In addition, it owned many thousand head of horses, cattle, and sheep. It is now a ruin.

[141] Callao: The port of Lima, Peru. It is still considered one of the best harbors in the world.

[142] San Joachim: The ordinary spelling is now San Joaquin.

[143] San Luis Rey, at Oceanside, Calif. The mission had been founded in 1798. By 1846 it was deserted, not ruined. It has since been restored.

San Luis was the greatest and richest of the missions. The church itself was 160 feet long, and had walls more than four feet thick. In the rear of it was a great enclosed square containing several acres used as a mission garden. When the order of secularization was carried out, in 1834, the mission had 3,500 Indians in its care. On its vast holdings grazed 25,000 head of cattle, 10,000 head of horses, 90,000 head of sheep. Such wealth probably helped to explain the malevolent attitude of the Mexican Government.

[144] Private individuals: In this connection the Pico family seemed to have done well by itself. Emory mentioned that the Picos then owned the St. Marguerita rancheria, and the San Juan Capistrano Mission.

[145] The San Juan Capistrano Mission (always misspelled by Emory) never attained the dignity of a cathedral church, although it possessed great impressiveness and beauty.

It was founded by Junípero Serra himself in 1776. The construction of the stone church (began in 1797) was the work of Indian artificers trained by the Franciscan fathers. A master mason, it is said, was brought up from Culiacán to supervise the process of building. By 1806 the structure was completed. Then on December 8, 1812, while an Indian congregation was at prayer, occurred a great earthquake. The dome collapsed, crushing to death about forty victims. Although the Mission itself continued to exist, the church was never rebuilt, and still stands as a ruin. Repairs and restoration in recent times have made San Juan Capistrano one of the most beautiful places in California.

In 1833 the status of the Mission was changed to that of a parish church. It was the first one to be secularized.

[146] Present spelling of the name of the town and its river is Santa Ana.

[147] The simple statement that the enemy's chief weapon was the lance goes a long way toward explaining his inability to resist General Kearny's small army.

[148] Modern maps of the city of Los Angeles seem to indicate that a branch of the Los Angeles River is meant.

[149] It is well worth noting that during all of the long Spanish-Mexican period Los Angeles had arrived at a population of no more than 1,500 inhabitants.

[150] The correct form of the name is, of course, Santa Barbara.

[151] Here Emory adds the following footnote to his account: "Subsequently to my leaving the Ciudad de Los Angeles, the entire plan of the fort was changed, and I am not the projector of the work finally adopted for the defence of that town."

[152] Assistants and instruments: A final reminder that Emory's aim was not

mere observation, but the collection of scientific data. Many observers had preceded him over the route, but he was the first scientist to make the trip and compile a scientific record.

[153] Wild oats, mustard, carrots: The spread of these and other introduced weeds from mission to mission has been studied by the process of dissolving eighteenth century adobe bricks and examining the vegetable matter used in them as a binder.

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